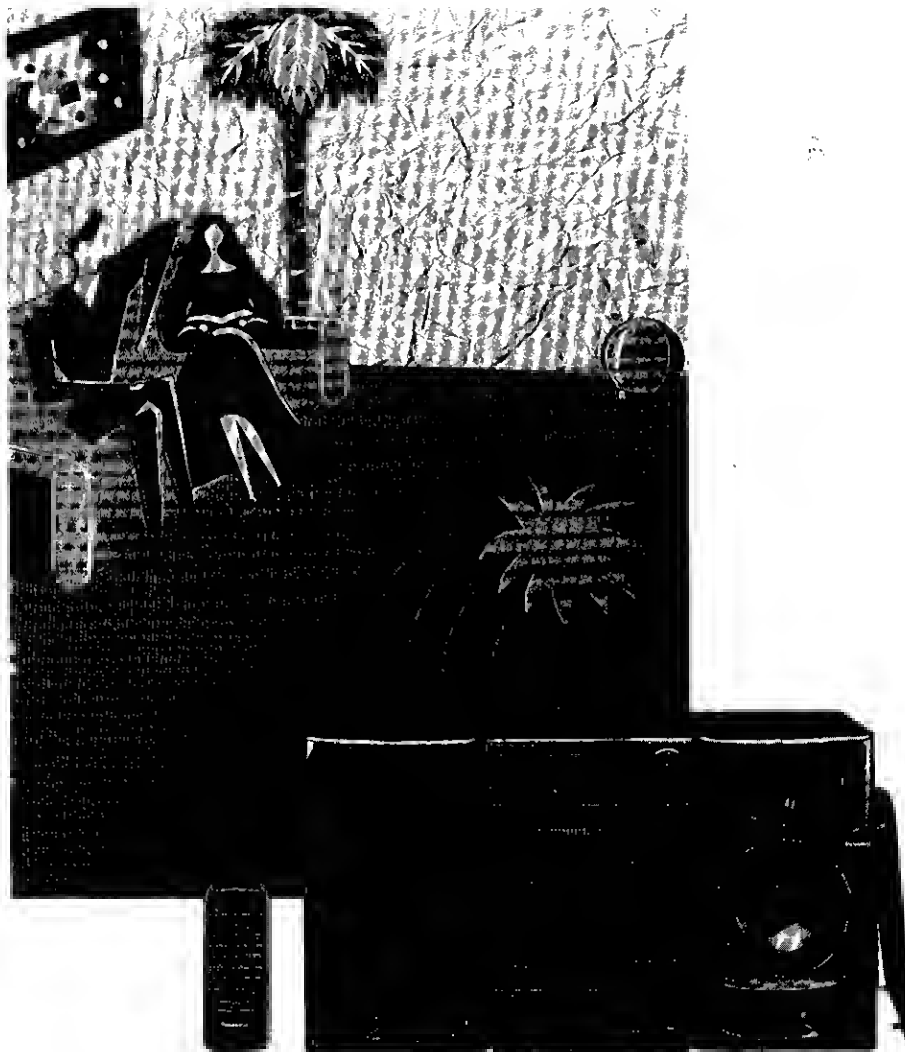


# Panasonic

## CD Stereo System SC-CH350

### Operating Instructions



#### Notes:

- Specifications differ according to the area code.
- The "EB" area code, for example, indicates United Kingdom specifications.
- The "EB" indication is shown on the packing case.

Before operating this unit, please read these instructions completely.

COMPACT  
**disc**  
DIGITAL AUDIO

RQT1791-B

F1292B0

EB GC GN

Thank you for purchasing this product.

For optimum performance and safety, please read these instructions carefully.

These operating instructions are applicable to the following systems.

System	Audio center	Speakers
SC-CH350	SA-CH350	SB-CH350

# Table of Contents

Caution for AC mains lead .....	3
Suggestions for Safety .....	4
Before Use .....	4
Concerning the Remote Control .....	5
Preparations .....	6
Front Panel Controls and Functions .....	12
Remote Control Unit Controls and Functions .....	18
Setting the Time of Day .....	19
Basic Operating Procedure .....	20
Listening to Radio Broadcasts .....	21
Listening to Compact Discs .....	24

Listening to Tapes .....	32
Making a Recording .....	36
Edit-Recording from Compact Discs .....	38
Tape-to-Tape Recording .....	45
Changing the Tone .....	46
Using the Timer .....	50
Enjoying the Microphone Mixing .....	56
Using an External Unit .....	57
Concerning the Display .....	58
Care & Use .....	59
Troubleshooting Guide .....	62
Technical Specifications .....	Back cover

THIS TUNER/RECEIVER IS CAPABLE OF RECEIVING THE NEW AM STEREO BROADCASTS FROM THE AM BAND RADIO STATIONS. HOWEVER LIKE MANY TUNERS AND RECEIVERS CURRENTLY AVAILABLE ON THE MARKET IT WILL REPRODUCE THIS AM STEREO SIGNAL ONLY IN AM MONO, WHICH, IN EFFECT, IS OF NO LESSER QUALITY THAN YOUR EXISTING AM MONO TUNER/RECEIVER.

**CLASS 1  
LASER PRODUCT**

(Back of product)  
(Komponentens bagside)  
(Produktets bagside)

**DANGER-Invisible  
laser radiation when  
open.  
AVOID DIRECT EX-  
POSURE TO BEAM.**

(Inside of product)

**ADVARSEL: USYNLIG LASERSTRÅLING  
VED ÅBNING. NÅR SIKKERHEDSAF-  
BRYDERE ER UDE AF FUNKTION.  
UNDGÅ UDSÆTTELSE FOR STRÅLING.**

(Indersiden af apparatet)

## SUOMI

### VAROITUS!

LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

**VARO!** Avvettäessä ja suojelikutte ohittettaessa olot altistune näkymätön laser säteilylle. Älä katso silmiesseen.

**VARNING!** Öppnlig laserstrålning när denna del är öppen och spårren är urkopplad. Beträkta ej strålen.

**ADVARSEL!** Uæynlig laserstrålning når deksel åpnes og sikkerhedelle brytes. Unngå eksponering for strålen.

(Tuotten sisällä)  
(Apparatens insida)  
(Produktets innsida)

### CAUTION!

THIS PRODUCT UTILIZES A LASER.  
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.  
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

## DANSK

### BEMÆRK!

I DETTE APPARAT ANVENDES EN LASER.  
BRUG AF BETJENINGSKNAPPER ELLER REGULERINGER ELLER FREMGANGSMÅDER UD OVER DE I DENNE BETJENINGSVEJLEDNING ANGIVNE, KAN MEDFØRE FARE FOR BESTRÅLING. ÅBN IKKE KABINETTET OG FØRSØG IKKE AT UDFØRE REPARATIONER SELV. REPARATIONER MÅ KUN FORETAGES AF KVALIFICEREDE TEKNIKERE.

## NORSK

### ADVARSEL!

DETTE PRODUKTET ANVENDER EN LASER.  
BETJENING AV KONTROLLER, JUSTERINGER ELLER ANDRE INNGREP ENN DE SOM ER BESKREVENT I DENNE BRUKSANVISNING, KAN FØRE TIL FARLIG BESTRÅLING.  
DEKSLER MÅ IKKE ÅPNES, OG FØRSØK ALDRI Å REPARERE APPARATET PÅ EGENHÅND.  
ALT SERVICE OG REPARASJONSARBEID MÅ UTFØRES AV KVALIFISERT PERSONELL.

# Caution for AC mains lead

## (For United Kingdom)



### ("EB" area code model only)

The "EB" indication is shown on the serial number tag.

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362. Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

### CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

### IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:


Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

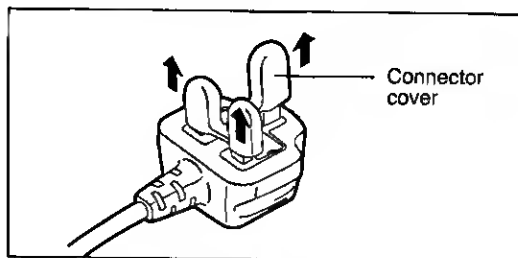
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug marked with the letter E or the Earth Symbol .

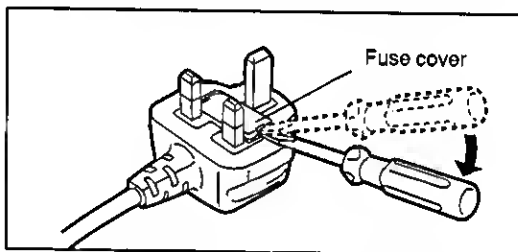
### Before use

Remove the connector cover as follows.

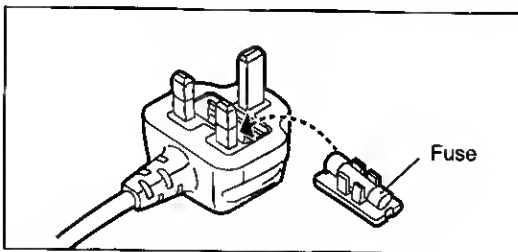


### How to replace the fuse

1. Remove the fuse cover with a screwdriver.



2. Replace the fuse and attach the fuse cover.



This apparatus was produced to BS 800.

# Suggestions for Safety

## ■ Use a standard AC wall outlet

1. Use from an AC power source of high voltage, such as that used for an air conditioner, is very dangerous. A fire might be caused by such a connection.
2. A DC power source cannot be used. Be sure to check the power source carefully, especially on a ship or other place where DC is used.

## ■ Grasp the plug when disconnecting the power supply cord

1. Wet hands are dangerous. A dangerous electric shock may result if the plug is touched by wet hands.
2. Never place heavy items on top of the power supply cord, nor force it to bend sharply.

## ■ Place the unit where it will be well ventilated

Place this unit at least 10 cm (4") away from wall surfaces, etc. Be careful that curtains and similar materials do not obstruct the ventilation holes.

## ■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.

In places where there is excessive vibration or humidity.

Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

## ■ Be sure to place the unit on a flat, level surface.

If the surface is inclined, a malfunction may result.

## ■ Never attempt to repair nor reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

## ■ Take particular care if children are present

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

## ■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

## ■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

## ■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

## ■ Disconnect the power supply cord if the unit will not be used for a long time

If the unit is left for a long time with the power ON, this not only will shorten its useful operation life, but also may cause other trouble.

## ■ If trouble occurs

If, during operation, the sound is interrupted or indicators no longer illuminate, or if an abnormal odour or smoke is detected, immediately disconnect the power cord plug, and contact with your dealer or an Authorized Service Center.

# Before Use

## (For areas except Continental Europe, Australia, New Zealand)

Be sure to disconnect the mains cord before adjusting the voltage selector.

Use a minus (-) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.

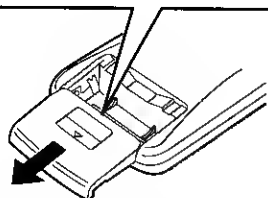
(If the power supply in your area is 117 V or 120 V, set to the "127 V" position.)

Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

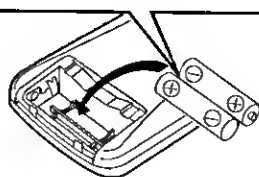
# Concerning the Remote Control

## Battery installation

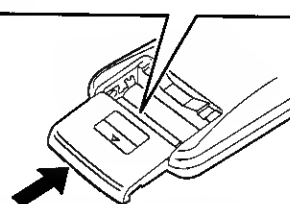
**1** Open the cover.



**2** Insert the batteries.



**3** Close the cover.



**1** Open the cover.

Press gently and slide the cover out.

**2** Insert the batteries included with this system.

- When you need to replace these batteries, use two UM-4 "AAA", IEC R03 (1.5 V) or equivalent batteries.

- Be sure that you insert the batteries so that their positive (+) and negative (-) polarities match the polarities indicated in the compartment. Batteries installed incorrectly may leak and cause damage.

- Refer to "Use of batteries" for additional information.

**3** Close the cover.

## Use of batteries

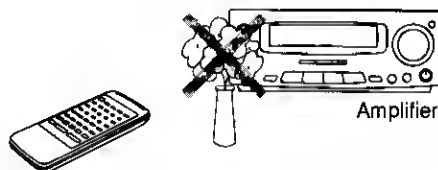
- Do not mix old and new batteries or batteries of different types (carbon and alkaline, etc.).
- The average battery life is about one year. Although the battery life varies depending on how often the device is used, you should generally replace the batteries about once a year.
- Replace the batteries if commands from the remote control transmitter do not operate the unit even when the transmitter is held close to the front panel.
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If you will not be using the remote control for a long period of time, remove the batteries and store them in a cool, dark place.

- If a battery leaks, remove all batteries and dispose of them properly. Thoroughly clean the battery compartment before inserting new batteries.

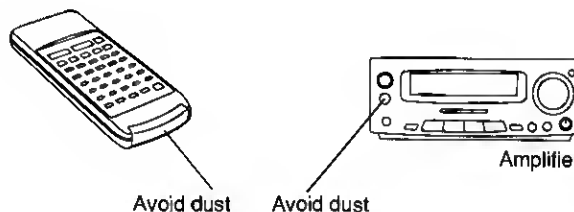
If the leaking electrolyte comes into contact with skin or clothes, flush with water immediately.

- Keep batteries out of the reach of children.
- Do not use rechargeable-type (nickel-cadmium) batteries.
- Do not attempt to recharge alkaline or carbon batteries.
- Always remove old, weak, or worn-out batteries promptly and dispose of them properly.
- Do not dispose of used batteries in household rubbish.

## Operation notes



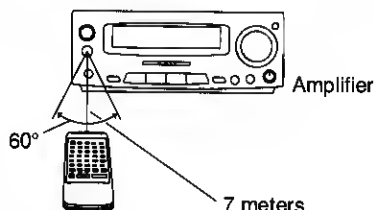
Amplifier



Avoid dust

Avoid dust

Aim the remote control transmission window toward the amplifier's sensor. Avoid any obstacles.



Amplifier

7 meters

- Use the remote control within a 60-degree angle of the amplifier.
- The reachable distance is within 7 meters directly facing toward the amplifier.

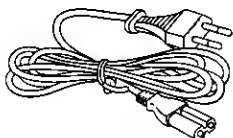
- Be sure the transmission window and the amplifier's sensor are free from dust. Excessive dust might prevent reception.
- If direct sunlight or other strong light source strikes the remote control signal sensor part of the amplifier, it may impair the remote control's operation. If there is a problem, place the amplifier away from the light source.
- If this system is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote-control transmitter a shorter distance from the system.

# Preparations

## Supplied accessories

Check the packing carton for these accessories.

AC power supply cord 1 pc.



Antenna holder 1 pc.



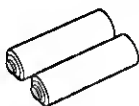
Remote control transmitter 1 pc.  
RAK-SC001WH



Mounting screws 2 pcs.



Remote control batteries 2 pcs.  
(UM-4, AAA, R03)



Attachment plug 1 pc.  
(For United Kingdom only)



LW/MW loop antenna 1 pc.



Power plug adaptor 1 pc.  
(For areas except Europe, Australia, New Zealand)



FM indoor antenna 1 pc.

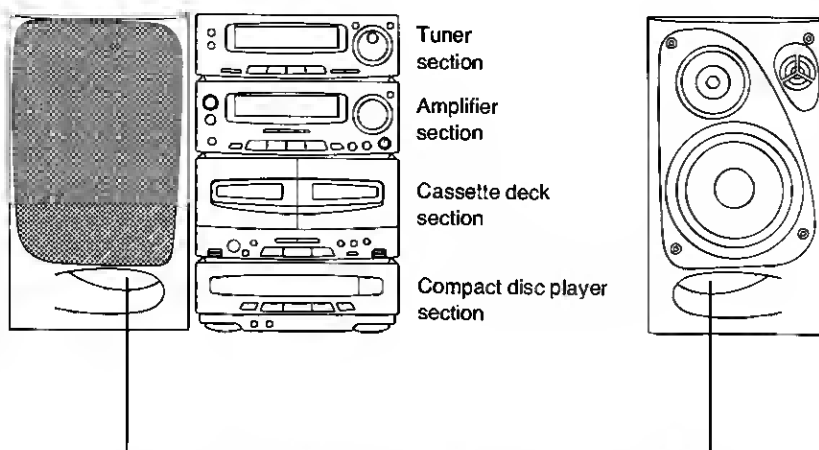


### Note:

The configurations of AC power supply cord and FM indoor antenna differ according to area.

## Stacking the components

Install the various components as shown below.



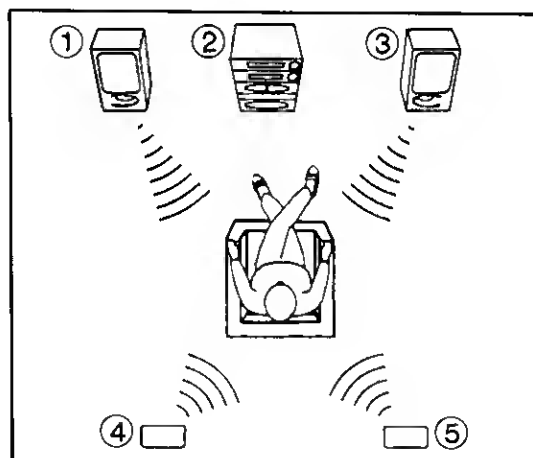
Place both speakers so that the bass-reflex part faces toward the system.

## ■ System layout

- ① Left speaker
- ② This system
- ③ Right speaker
- ④ Surround speaker (left, not included)
- ⑤ Surround speaker (right, not included)

To produce a better stereo sound, install both speakers away from the system.

Surround sound effect differs according to where install the surround speakers. Install them as you like.

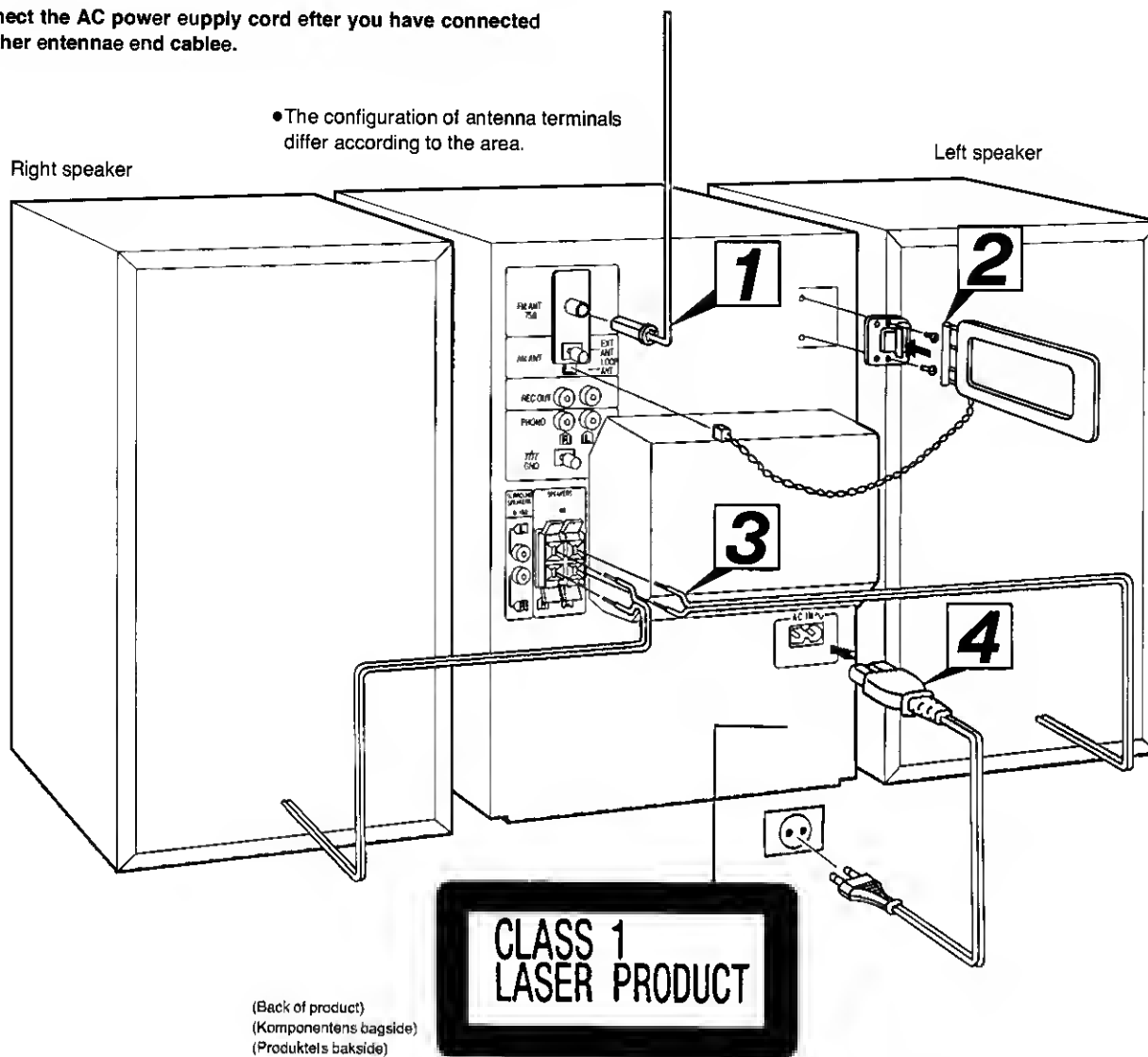


# Preparations (continued)

## Connections

Connect the AC power supply cord after you have connected all other antennae and cables.

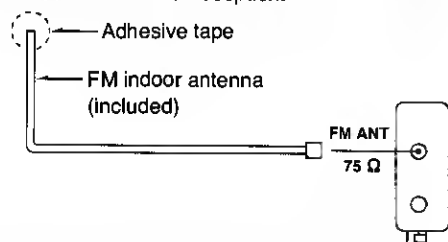
• The configuration of antenna terminals differ according to the area.



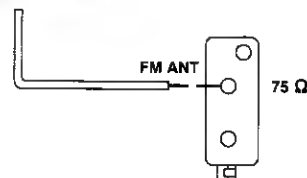
### LUOKAN 1 LASERLAITE KLASS 1 LASER APPARAT

#### 1 Connect the FM indoor antenna.

Install the antenna on a wall at a height and in a direction which result in the best reception.



For areas except Europe



The tip of the internal antenna wire should not come into contact with any metal objects.

When you cannot get a good reception with this FM indoor antenna, we recommend you install an FM outdoor antenna. (Not included. See page 10.) Disconnect the FM indoor antenna if you install an FM outdoor antenna.



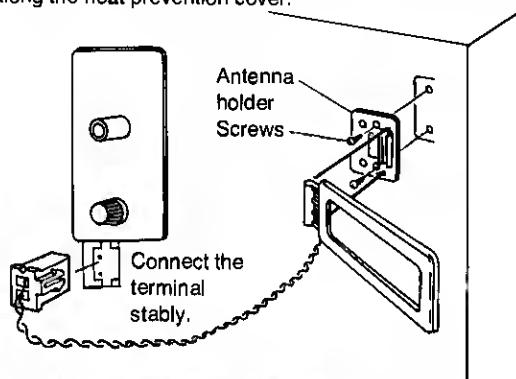
## 2 Connect the LW/MW loop antenna.

1. Attach the antenna holder with screws (included) to the rear panel.
2. Clamp the antenna to the antenna holder and connect the antenna terminal to the rear panel.
3. Position the loop for the best reception.

You may attach the LW/MW antenna holder to a rack or other structure.

### Notes:

- To minimize noise pickup, keep the LW/MW loop antenna away from the speaker cable, power cord, and metal surfaces.
- For better reception, keep the LW/MW loop antenna cord along the heat prevention cover.



## 3 Connect the speaker cables.

- Be sure to connect the cable from the right speaker to the right terminal and the cable from the left speaker to the left terminal.
- Be sure to connect only positive (red) wires to positive (+) terminals and negative (black) wires to negative (-) terminals.

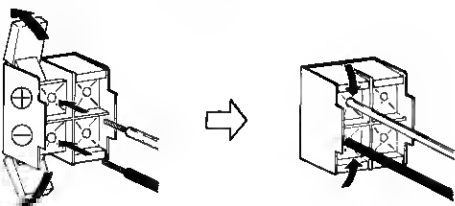
### Connection of speaker cables

1. Strip off the outer covering, and twist the center conductor.



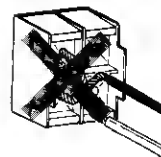
Make sure the bare ends of the wires are not unraveled. (If they are, twist them tight again.)

2. Insert the wire to the rear panel and close the lever.



### Notes:

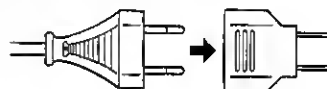
- To prevent damage to circuitry, never short-circuit positive (+) and negative (-) speaker wires.



**FOR UNITED KINGDOM ONLY**  
**BE SURE TO READ THE CAUTION FOR**  
**AC POWER SUPPLY CORD ON PAGE 3**  
**BEFORE PROCEEDING TO THE STEP 4**

## 4 Connect the AC power supply cord after you have connected all other cables and cords.

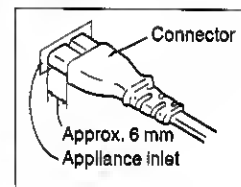
**For areas except Europe, Australia, New Zealand**  
 If the power plug will not fit your socket, use the power plug adaptor (included).



**For areas except Australia and New Zealand:**

### Insertion of Connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing. However there is no problem using the unit.



# Preparations (continued)

## Connections (continued)

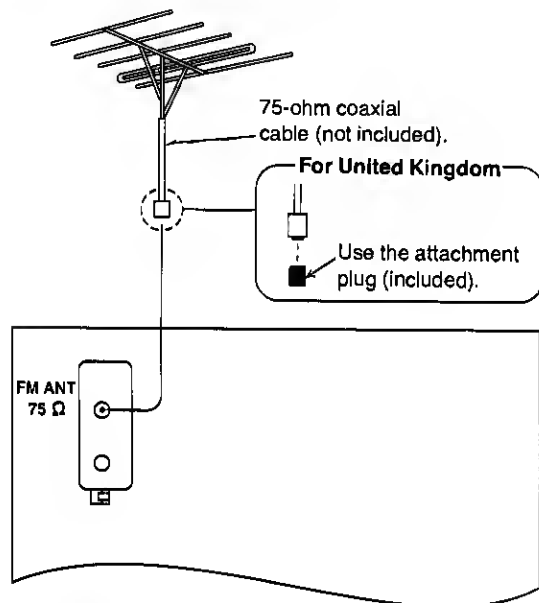
### ■ Optional antenna connections

#### FM outdoor antenna (not included)

If the FM indoor antenna does not provide satisfactory reception of FM broadcasts, use an outdoor antenna.

You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc. An outdoor antenna should be installed by a competent technician only.

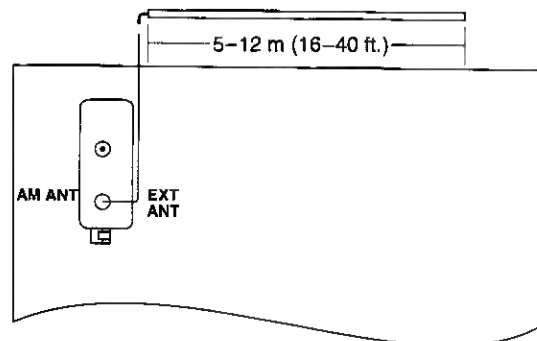
FM outdoor antenna



#### LW/MW outdoor antenna (not included)

An outdoor antenna may be required in a mountainous region, or if this system is located inside a reinforced-concrete building, etc.

Run 5 to 12 m of vinyl-covered wire horizontally along a window or other convenient location.



#### Note:

Do not remove the LW/MW loop antennae.

#### For areas except Europe (FM outdoor antenna)

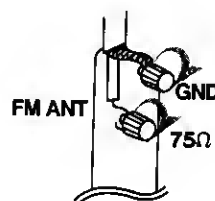
1. Remove a piece of the outer vinyl sheath from the end of the cable.



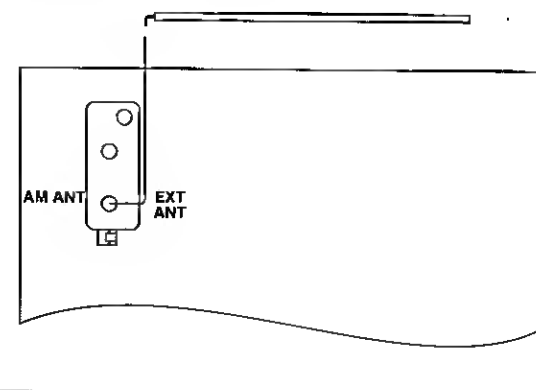
2. Bundle the shield braid, and remove a piece of the inner vinyl sheath covering the core wire.



3. Connect the core wire and the shield braid.

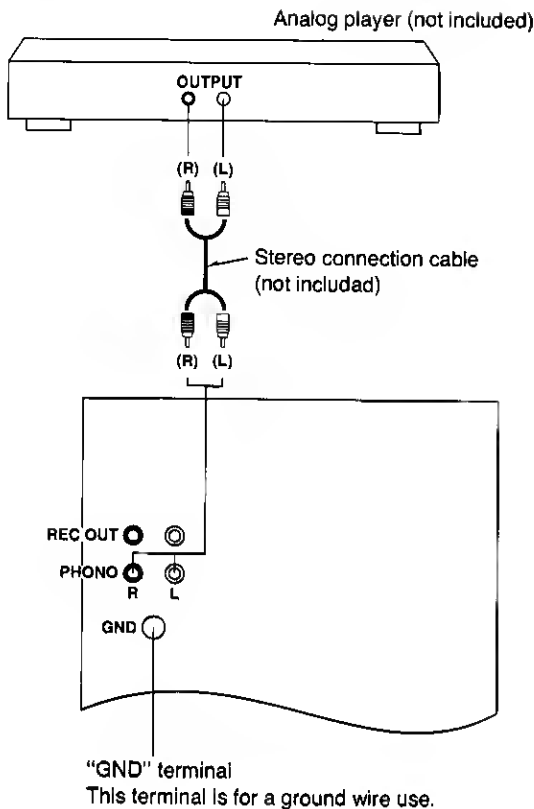


#### For areas except Europe



## ■ External unit connection

### Analog player



#### Note:

For the set with "DAT" terminal instead of "PHONO": Use an analog player which has built-in phono equalizer. Connect the stereo connection cable to the DAT [PLAY (IN)] terminal.

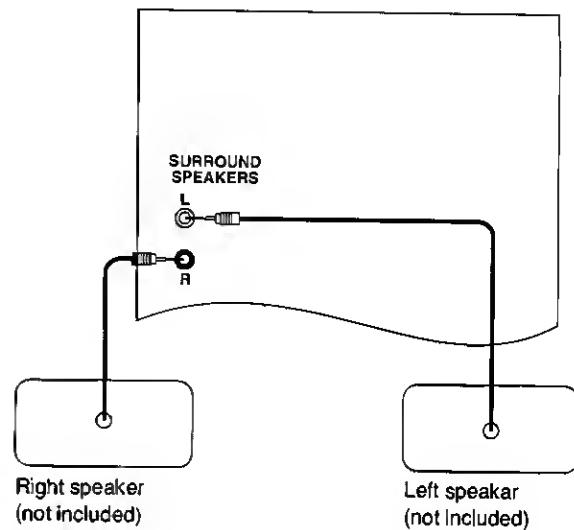
### ■ "REC OUT" terminal

This terminal is used to connect this system to other cassette deck you have. Source from this system could be recorded through your other cassette deck.

#### For areas except Europe:

DAT (digital audio tape deck, not included) can be also connected to this system instead of an analog player.

### Surround speakers

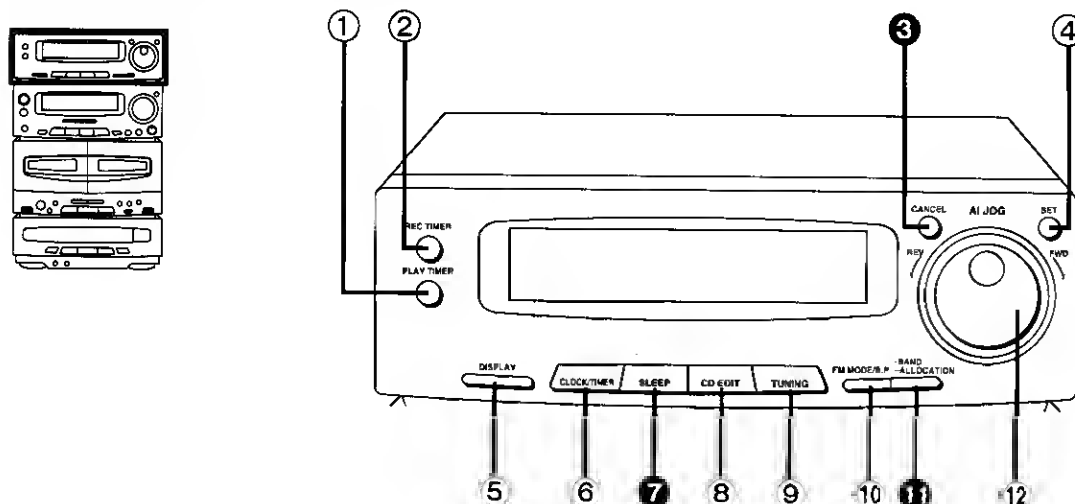


#### Notes:

- Be sure to connect both speaker systems. If only one side is connected, no sound will be heard.
- Install each speaker left and right at the back of the listening space.

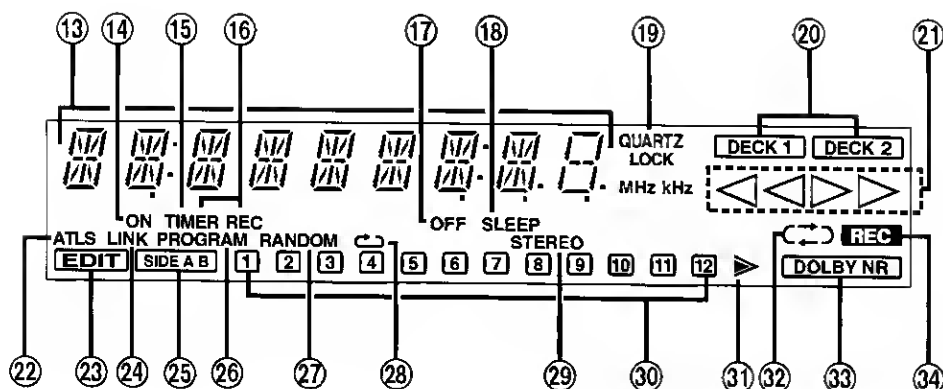
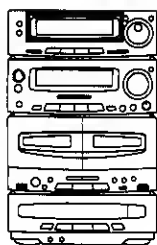
# Front Panel Controls and Functions

The functions indicated by the numbers with black background (for example ③) can also be activated from the remote control transmitter. (See page 18.)



## Tuner section

- ① **Timer play button (PLAY TIMER)**  
Use for timer play (when you want play to begin automatically at a preset time).
- ② **Timer recording button (REC TIMER)**  
Use for timer recording (when you want to begin recording automatically at a preset time).
- ③ **Cancel button (CANCEL)**  
Press to cancel the contents chosen with the jog dial.
- ④ **Set button (SET)**  
Press to set various functions.
- ⑤ **Display select button (DISPLAY)**  
Press to select the display (mode display, clock, tape counter, etc.).
- ⑥ **Clock/timer button (CLOCK/TIMER)**  
Use to select the desired timer mode or to adjust the clock.
- ⑦ **Sleep timer button (SLEEP)**  
Press when you want the system to turn itself off.
- ⑧ **Compact disc edit-recording mode select button (CD EDIT)**  
Press to select the desired edit-recording mode.
- ⑨ **Tuning mode select button (TUNING)**  
Press to select the preset or manual tuning mode.
- ⑩ **FM mode/beat proof button (FM MODE/B.P)**  
Press to select the FM listening mode (stereo or monaural) during FM broadcasts or to reduce the unwanted beat signals (whistle) during recording of a LW/MW broadcast.
- ⑪ **Band select button (-BAND, -ALLOCATION)**  
Press to select the LW, MW or FM radio band.  
Press and hold to change the MW frequency step.
- ⑫ **Jog dial (AI JOG)**  
Use to select the contents of the mode, i.e., select tracks in CD player mode or stations in the tuner mode, as well as many other functions.



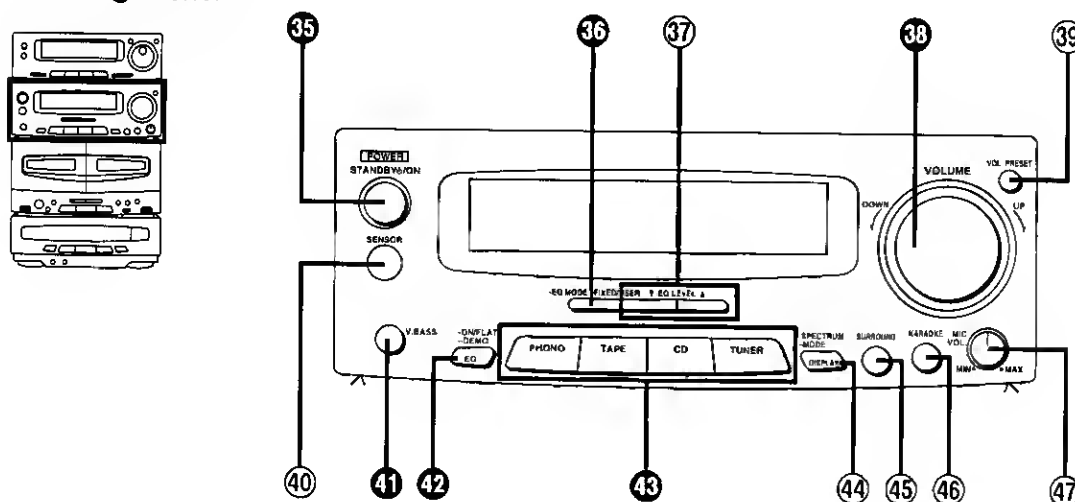
## Display section

- ⑬ Alphanumeric display**  
Shows the selected source, present time, tape counter and the contents of the timer setting, received frequencies, CD edit-recording mode, etc.
- ⑭ Timer on-time Indicator (ON)**  
Shows the timer on-time (the time the system is set to go on).
- ⑮ Timer play indicator (TIMER)**  
Lights when you press the timer play button.
- ⑯ Timer recording indicator (TIMER REC)**  
Lights when you press the timer recording button.
- ⑰ Timer off-time Indicator (OFF)**  
Shows the timer off-time (the time the system is set to shut off).
- ⑱ Sleep timer indicator (SLEEP)**  
Lights when you press the sleep timer button.
- ⑲ Quartz lock indicator (QUARTZ LOCK)**  
Lights when you precisely tune in a broadcast station.
- ⑳ Deck 1/deck 2 indicator (DECK 1, DECK 2)**  
Lights to show which deck is operational (deck 1 or deck 2).
- ㉑ Tape direction indicators ( <•▷ , <◁•▷▷ )**  
Lights when you play or record the tape.  
Flashes when you quickly search for the beginning of a program (TPS), etc.  
Shows the direction of tape travel.
- ㉒ Automatic tape level setting indicator (ATLS)**  
Lights when you use ATLS recording.
- ㉓ Compact disc edit-recording indicator (EDIT)**  
Lights when you use the edit-recording from a compact disc.
- ㉔ Link indicator (LINK)**  
Lights to show the disc link is possible when you use the recording from a compact disc.
- ㉕ Tape side indicator (SIDE A, B)**  
Shows which side of the cassette tape (A or B) will be recorded on when you use the edit-recording of a compact disc.
- ㉖ Program Indicator (PROGRAM)**  
Lights during the program play mode of the compact disc.
- ㉗ Random play indicator (RANDOM)**  
Lights during the random play mode of the compact disc.
- ㉘ Repeat play indicator (↺)**  
Lights during the repeat play mode of the compact disc.
- ㉙ FM stereo indicator (STEREO)**  
Lights when you receive an FM stereo broadcast. It will not light if you are using the FM mode/beat proof button to select monaural mode.
- ㉚ Matrix display (1-12)**  
Shows the number of tracks and preset channels.
- ㉛ Over Indicator (➤)**  
Lights if there are 13 or more tracks on the compact disc.
- ㉜ Reverse mode Indicators (↵) (↶) (↷)**  
Shows which of the reverse modes you selected with the reverse mode button.
- ㉝ Dolby noise reduction indicator (DOLBY NR)**  
Lights when you activate the Dolby noise reduction system.
- ㉞ Recording indicator (REC)**  
Lights when the system is in the recording (recording standby) mode.

# Front Panel Controls and Functions

(continued)

- According to the area, there is a set with ④ DAT instead of ④ PHONO.



## Amplifier section

### ③⑤ Power "STANDBY $\odot$ /ON" switch (POWER, STANDBY $\odot$ /ON)

This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY  $\odot$  position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

### ③⑥ Equalizer mode select button (-EQ MODE, -FIXED/USER)

This is used to select the equalizer mode. If you press and hold this button, the equalizer mode (FIXED or USER) will be switched.

### ③⑦ Equalizer level-control buttons (EQ LEVEL)

These buttons are used to adjust of the equalization level.

### ③⑧ Volume level control (VOLUME)

Turn to adjust the volume level.

Note that --- dB is the lowest volume setting and 0 dB is the highest.

### ③⑨ Volume preset button (VOL. PRESET)

Use to preset volume for timer play.

### ④① Remote control signal sensor (SENSOR)

Receives the signals from the remote control.

### ④① V. bass button (V. BASS)

Press to boost the dynamic low-frequency ranges.

### ④② Equalizer ON/FLAT button (EQ, -ON/FLAT, -DEMO)

This button is used to switch the equalizer on or flat. If you press and hold this button, sound effects will be sequentially changed (Demonstration function).

### ④③ Input select buttons (PHONO, TAPE, CD, TUNER)

Press to select the sound source.

### ④④ Display mode select button (DISPLAY, -SPECTRUM, -MODE)

This button is used to select one of five spectrum curves. If you press and hold this button, the display mode will change.

### ④⑤ Surround button (SURROUND)

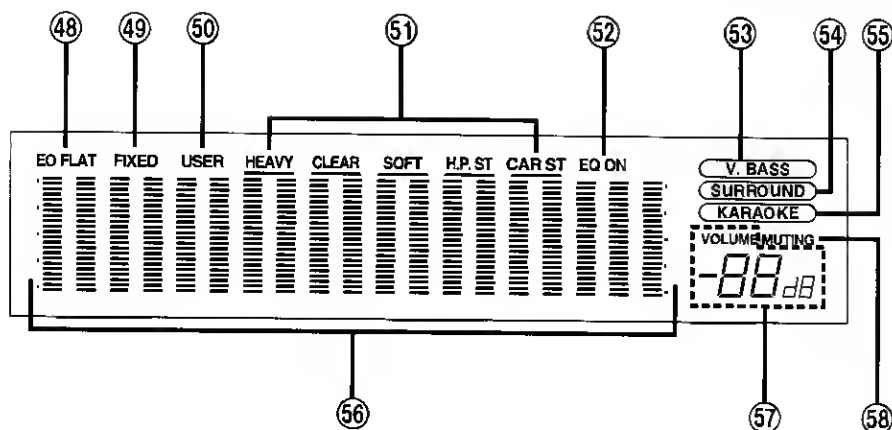
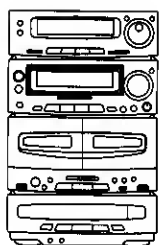
This button is used to activate the surround sound effect.

### ④⑥ Karaoke button (KARAOKE)

This button is used to perform "karaoke" (making microphone mixing with an accompaniment).

### ④⑦ Microphone volume control (MIC VOL.)

This control is used to adjust the microphone volume level.

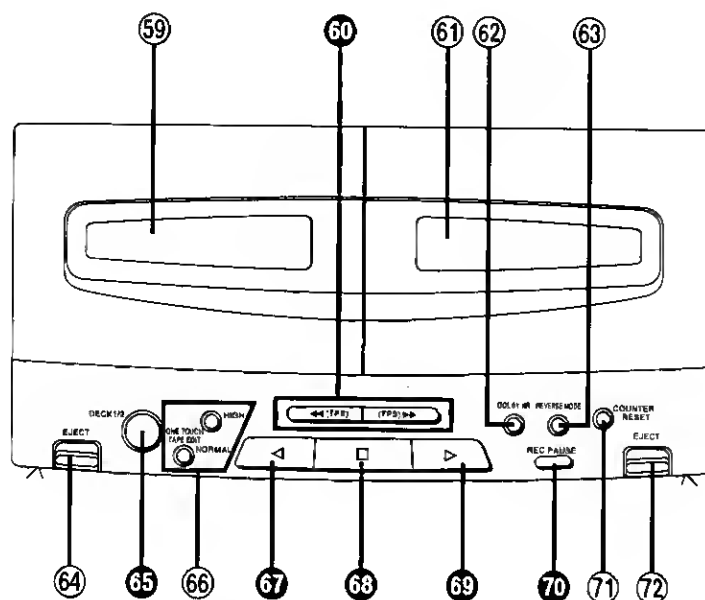
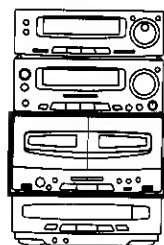


## Display section

- ④⑧ **Equalizer flat indicator (EQ FLAT)**  
Lights when the equalizer function is turned off.
- ④⑨ **Fixed indicator (FIXED)**  
Lights when the pre-programmed equalization curve is selected.
- ⑤① **User indicator (USER)**  
Lights when the "USER" mode equalization curve is selected.
- ⑤① **Equalization mode indicators (HEAVY~CAR ST)**  
Shows the mode which is currently used in the five equalization curves.
- ⑤② **Equalizer on indicator (EQ ON)**  
Lights when the equalization function is turned on.
- ⑤③ **V. Bass indicator (V. BASS)**  
Lights when the V. Bass mode is activated.
- ⑤④ **Surround Indicator (SURROUND)**  
Lights when the surround effect is activated.
- ⑤⑤ **KARAOKE Indicator (KARAOKE)**  
Lights when the KARAOKE mode is activated.
- ⑤⑥ **Equalization/spectrum analysis level display**  
Shows the equalization/spectrum analysis level.
- ⑤⑦ **Volume level display**  
Shows the volume level.
- ⑤⑧ **Muting indicator (MUTING)**  
Lights when the muting mode is activated.

# Front Panel Controls and Functions

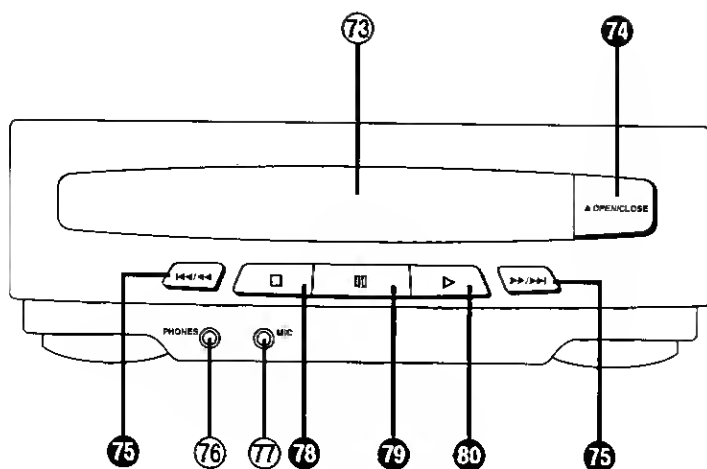
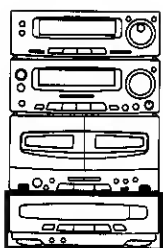
(continued)



## Cassette deck section

- 59 Deck 1 cassette holder**
- 60 Fast-forward/rewind/tape program sensor (TPS) buttons [◀◀ (TPS), (TPS) ▶▶]**  
Press to advance or rewind the tape, or to quickly search for the beginning of a track while the tape is being played.
- 61 Deck 2 cassette holder**
- 62 Dolby noise reduction button (DOLBY NR)**  
Use to reduce the hissing noise heard from the tape. This system has the Dolby B-type noise reduction system.
- 63 Reverse mode select button (REVERSE MODE)**  
Press to select the reverse mode (for playback and recording).
- 64 Deck 1 cassette eject button (EJECT)**  
Press to open the deck 1 cassette holder.
- 65 Deck 1/deck 2 select button (DECK 1/2)**  
Press to select the deck to be operated.
- 66 One-touch tape edit buttons (ONE TOUCH TAPE EDIT, NORMAL, HIGH)**  
Press to start the tape-to-tape recording.
- 67 Reverse-side playback button (◀)**  
Press to start the playback or recording (deck 2) in the reverse direction.
- 68 Stop button (□)**  
Press to stop the tape.
- 69 Forward-side playback button (▶)**  
Press to start the playback or recording (deck 2) in the forward direction.
- 70 Record/record standby button (REC PAUSE)**  
Press to put deck 2 into the record standby mode.
- 71 Tape counter reset button (COUNTER RESET)**  
Press to reset the tape counter indicator to 000.
- 72 Deck 2 cassette eject button (EJECT)**  
Press to open the deck 2 cassette holder.

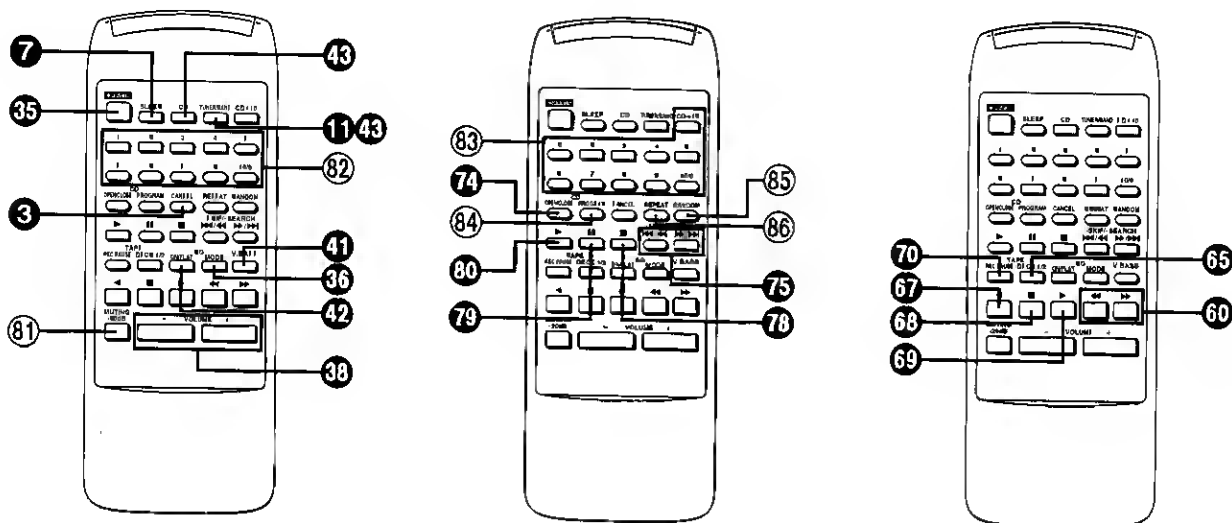




## Compact disc player section

- 73 Disc tray**
- 74 Disc tray open/close button (▲ OPEN/CLOSE)**  
Press to open and close the disc tray.
- 75 Skip/search buttons (⏮/⏪ • ⏩/⏭)**  
Press to move forward or backward through the tracks on a disc, or to hear disc sound at high speed while searching in the play mode.
- 76 Headphones jack (PHONES)**  
Plug headphones cord into this jack.
- 77 Microphone jack (MIC)**
- 78 Stop button (□)**  
Press to stop the disc play.
- 79 Pause button (⏸)**  
Press to stop the disc play temporarily.
- 80 Play button (▶)**  
Press to start disc play.

# Remote Control Unit Controls and Functions



## Common operation controls

The function description of buttons 35, 36, 38, 41, 42 and 43 is as described under "Amplifier section" on page 14.

### 81 Muting button (MUTING -20 dB)

Press to temporarily attenuate (mute) the volume level.

## Tuner controls

The function description of buttons 3, 7 and 11 is as described under "Tuner section" on page 12.

### 82 Preset-tuning buttons (1-10/0)

Press to select the preset channel of the tuner.

## Compact disc controls

The function description of buttons 74, 75, 76, 79 and 80 is as described under "Compact disc player section" on page 17.

### 83 Numeric buttons (1-10/0, +10)

Use to specify the compact disc's track.

### 84 Program button (PROGRAM)

Press to activate the program play mode. You can then enter specific tracks using the numeric buttons.

### 85 Random button (RANDOM)

Press to play the disc's tracks in random order.

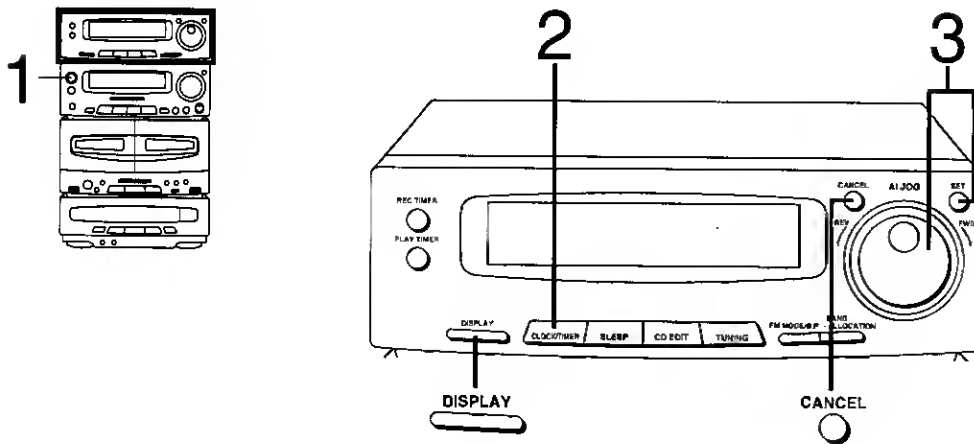
### 86 Repeat button (REPEAT)

Press to activate the repeat mode.

## Cassette deck controls

The function description of buttons 60, 65, 67, 68, 69 and 70 is as described under "Cassette deck section" on page 16.

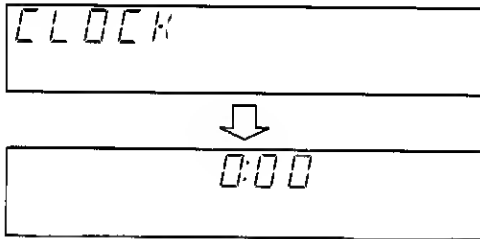
# Setting the Time of Day



These instructions explain how to set the time of 18:20.

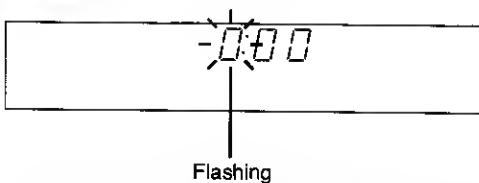
- 1 **Switch on the power.**
- 2 **Press CLOCK/TIMER.**
- 3 ① **Select the CLOCK mode by turning the jog dial.**

The display will change to P-TIMER, R-TIMER, SLEEP, and CLOCK.

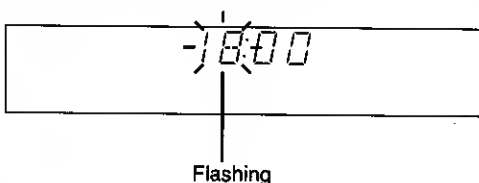


The display will return to what was previously indicated if you allow 10 or more seconds to elapse before you accomplish the next operation.

- ② **Press SET.**



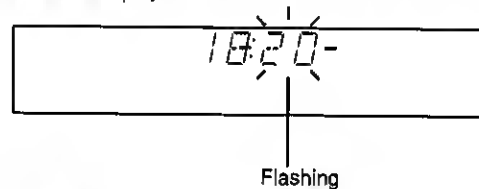
- ③ **Turn the jog dial to the correct hour.**  
Turn clockwise to increase numbers and counterclockwise to decrease.



- ④ **Press SET.**

- ⑤ **Turn the jog dial to the correct minute.**

Going from 59 to 00 on the minute display will not change the hour display.



- ⑥ **Press SET.**

The display will change to the previous display.

## Note:

"E" appears on the display if the power cord has been once disconnected or there has been a power failure. If this happens, reset the time.

## ■ When wrong setting has been done

### Press CANCEL.



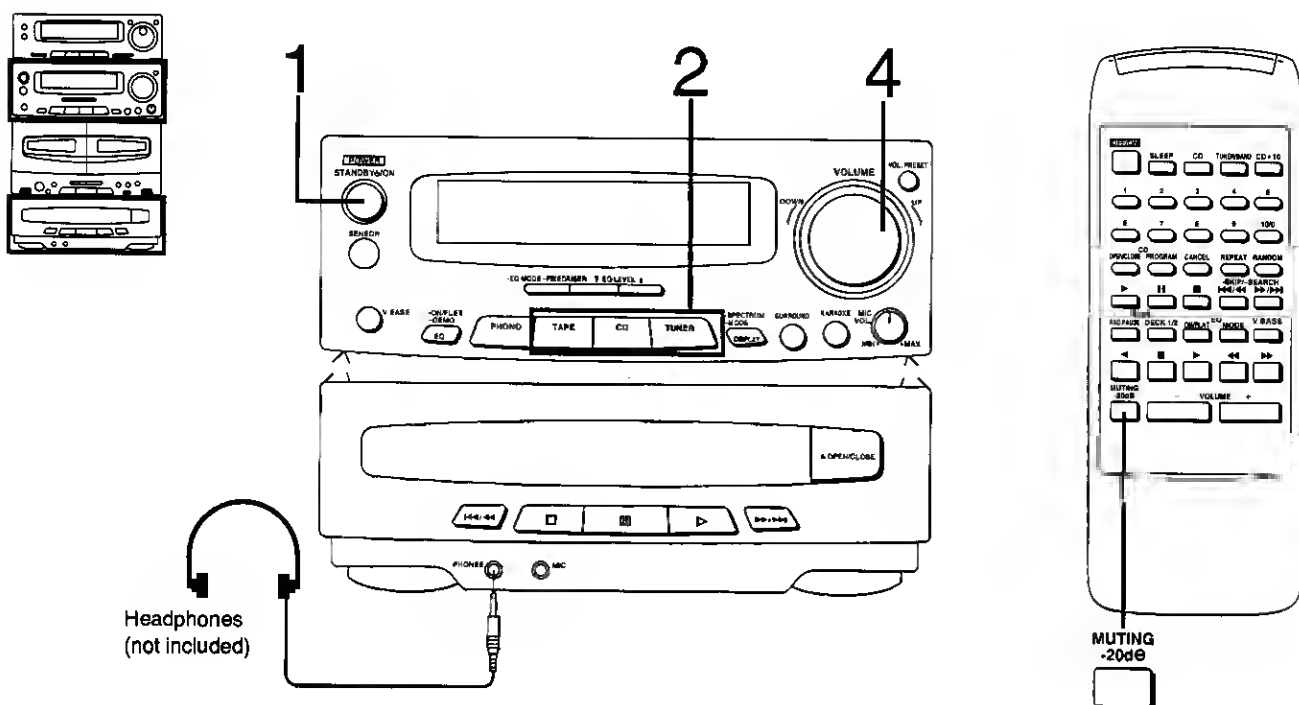
The display will return to the previous step.

## ■ To confirm the time of day

### Press DISPLAY.



# Basic Operating Procedure



(Also available from the remote control. Follow the procedure described below.)

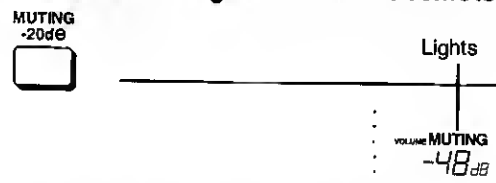
- 1 Press **POWER STANDBY/ON** to switch on the power.
- 2 Select the sound source by pressing **TAPE**, **CD** or **TUNER**.  
The display of the selected mode will appear. If you press a different sound source while listening to a compact disc or tape, the disc or tape automatically stops playing.  
•When selecting the tape mode from the remote control, press **◀/▶** on **TAPE** instead.  
The deck will automatically start playing.
- 3 Start the sound source.
- 4 Adjust the volume level.  
The memory backup function will retain the volume level and sound source.

## Note:

Before you set the system to the standby mode, be sure to reduce the volume level to prevent the extremely high output from the amplifier from damaging the speakers.

## How to mute the volume

Press the muting button on the remote control.



The muting indicator appears on the display.

- This lowers the volume level by 20 dB (approximately 1/10).
- Cancel the muted state by pressing the muting button once again or reduce the volume level to the minimum position and then reset to the desired volume.

## How to use headphones (not included)

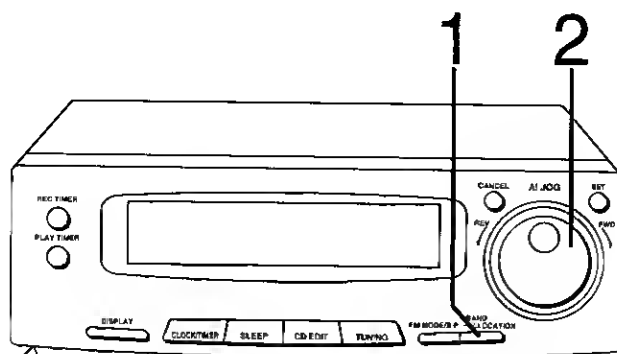
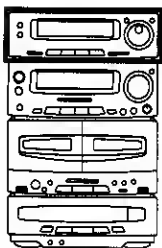
Reduce the volume level.

Connect the headphones to the headphones jack.

- When you connect the headphones, the speakers will automatically cut off.
- Avoid listening for prolonged periods of time to prevent hearing damage.
- Plug type: Stereo mini

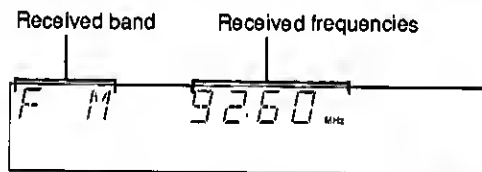
# Listening to Radio Broadcasts

## Manual tuner operation (to tune to broadcasts by using the jog dial)



### 1 Press the band-select button to select FM, LW or MW.

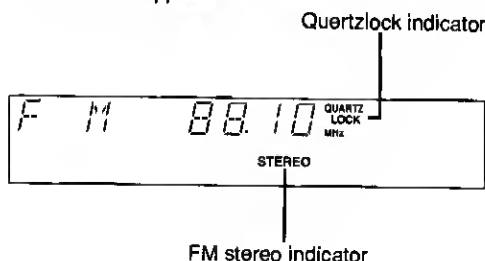
The display will show which band you selected.



### 2 Turn the jog dial to tune in the desired broadcast.

The display will show the frequency to which you have tuned.

- If you have tuned in an FM stereo broadcast, the FM stereo indicator will appear.



### ■ MW allocation settings

This unit comes equipped with an electronic digital tuner that divides the broadcast band into many small steps. These steps match the assignable broadcast frequencies and intervals in between. Each country allocates (assigns) broadcast bands according to their particular needs.

When the band select button is pressed for about 3 seconds, the MW frequency step will change to 9 or 10 kHz per step. In order to return to the original frequency indication, press this button for about 3 seconds again.

### ■ About one touch tuning

From the power standby condition, you can listen to radio broadcast by pressing TUNER on the amplifier section.

You can receive the station last tuned in when the power was switched to standby condition.



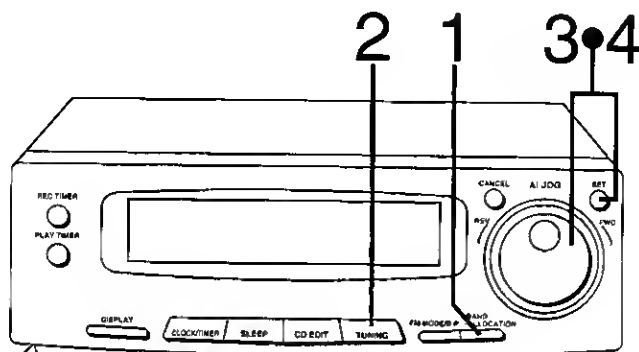
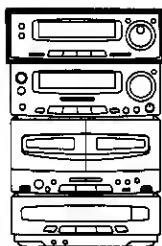
# Listening to Radio Broadcasts (continued)

## Memory presetting

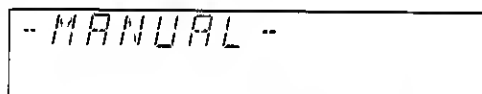
When you preset broadcast frequencies to the memory, you can then easily select any of those broadcast frequencies by pressing one of the numeric buttons on the remote control or by using the jog dial.

You can input up to 30 radio stations (10 FM, 10 LW and 10 MW) into the tuner's preset memory.

(When you memorize a new frequency on a preset channel, it cancels the frequency previously memorized on that preset channel.)



- 1 Press the band-select button to select FM, LW or MW.
- 2 Press TUNING to select the MANUAL tuning mode.
  - Every time you press this button, the MANUAL and PRESET modes alternately appear.

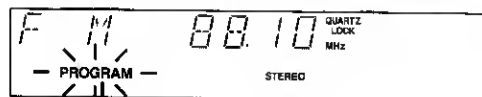


- 3 ① Tune in your favorite station using the jog dial.

Turn the jog dial until the correct frequency and the quartz lock indicator appear on the display.

- ② Press SET to activate the program indicator.

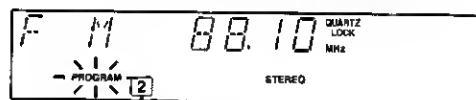
The program indicator will flash for about 10 seconds.



Flashing

- 4 ① Turn the jog dial to select the desired preset channel number while the program indicator is flashing.

- : The channel number will increase from 1 to 10.
- : The channel number will decrease from 10 to 1.



Channel number

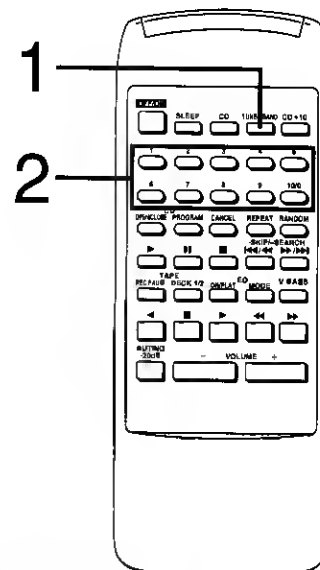
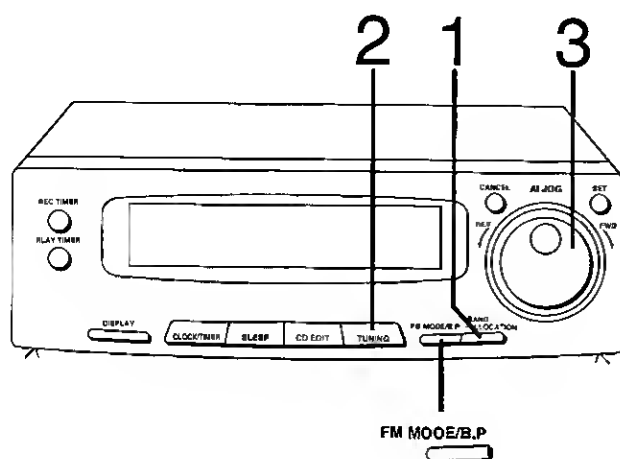
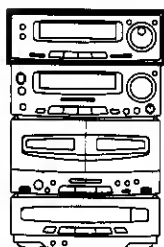
- ② Press SET.

The program indicator will disappear.

- 5 Repeat steps 3 through 4 to memorize a station in each of the remaining preset channels.

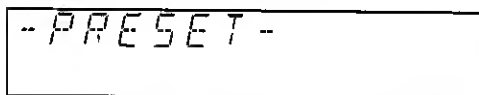
## Memory tuner operation (to listen to broadcast stations preset into memory)

Switch on the power and be sure you've completed the steps of "Memory presetting" on page 22.



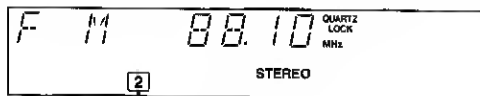
### ■ From the main unit

- 1 Press the band-select button to select FM, LW or MW.  
Each time you press the band-select button, FM, LW and MW indicators will alternately appear.
- 2 Press TUNING to select PRESET.



- 3 Turn the jog dial to select the desired preset channel number.

The selected preset channel number will appear on the display.

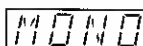


Channel number

### ■ If noise is excessive in the FM mode

Press FM MODE/B.P to monaural position.

FM MODE/B.P



You will be in the monaural position when the STEREO indicator goes out.

The sound will then be heard in monaural. If the broadcast signal is weak, or if there is a large amount of interference, you will get a poor sound using FM MODE/B.P.

### ■ From the remote control

- 1 Press TUNER/BAND to select FM, LW or MW.
- 2 Press the numeric button corresponding to the preset channel you wish to tune in.

### ■ Most recent memory

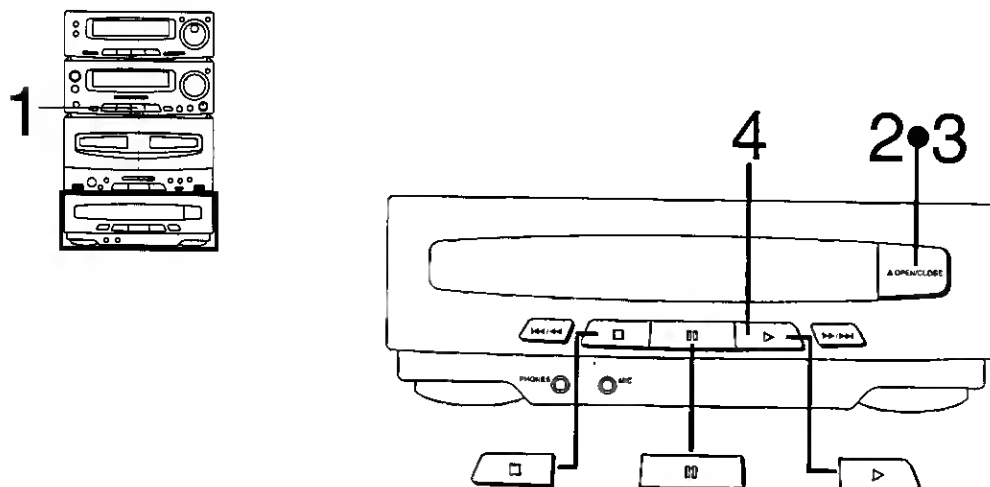
The most recent memory system remembers the broadcast station last tuned to when you switch the power to standby mode or select other functions. When you switch the tuner back on, the last tuned station will be on.

The presets will stay in the memory for approximately 2 weeks, even if there is an interruption.

# Listening to Compact Discs

## Sequential play

Sequential play refers to play beginning with the first track and continuing in order to the last track.



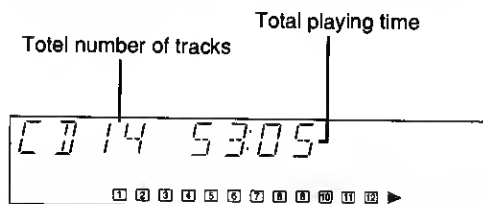
(Also available from the remote control)

- 1 Press the CD input select button.
- 2 Press **OPEN/CLOSE** to open the disc tray.  
Insert the disc with label facing up.  
Do not put your finger through the hole in the middle of the disc tray. It could get caught when the tray closes.

Label must face up.



- 3 Press **OPEN/CLOSE** to close the disc tray.  
When the disc tray is closed, the disc rotates, and the total number of tracks and total playing time both appear on the display panel.

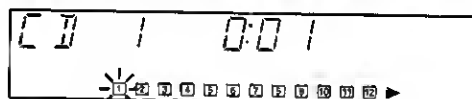


When there are 13 or more tracks on the disc, ➤ will appear.

- 4 Press the CD play button.

Disc play begins from the first track on the disc. The **pickup** (a laser device that reads the information on the disc surface) moves across the disc as the disc is played.

- The number of the track being played will flash while the track is played and go out at the end of that track.



The track number currently playing flashes.

- Play stops automatically when the last track on the disc finishes playing. (The display returns to the total number of tracks and total playing time indications.)

### Notes:

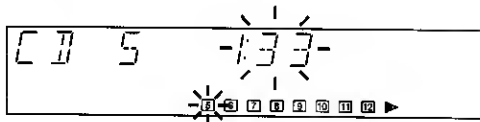
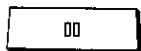
- The total playing time which appears on the display includes the time between tracks, hence there may sometimes be a difference of several seconds between this time and the playing time indicated in the liner notes that comes with the disc.
- If you press the play button on the remote control instead of **OPEN/CLOSE** after inserting a disc, the tray will close and play will start directly from the track 1, but the total tracks and total playing time will not be displayed.



■ **To temporarily stop the disc play**

(Also available from the remote control)

**Press the pause button.**



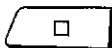
The track number display and the elapsed time will start flashing.

Press the play or pause button to play again.

■ **To stop the disc play**

(Also available from the remote control)

**Press the stop button.**



The player switches to the stop mode and the total number of tracks and total playing time are displayed.

■ **About one touch playing**

From the power standby condition, you can listen to compact discs by pressing the CD play button (except the condition during TIMER/TIMER REC Indicator lights).

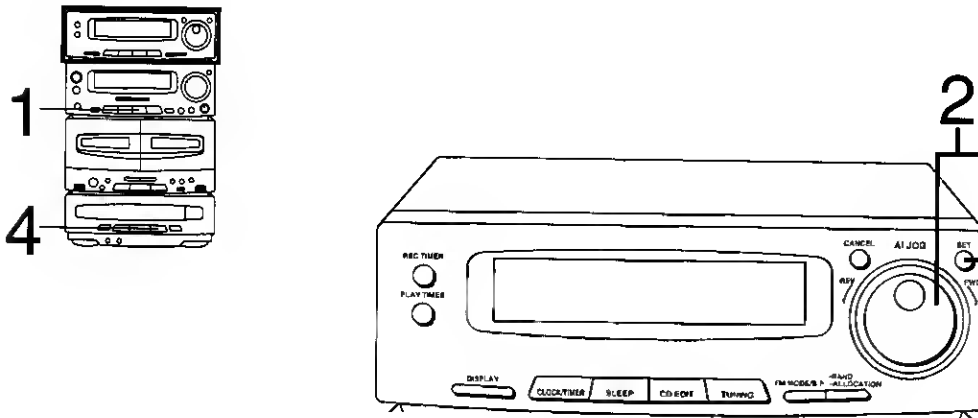
The play will start from the first track.



# Listening to Compact Discs (continued)

## Program play

This function allows you to program up to 36 tracks on a disc in any order you choose.



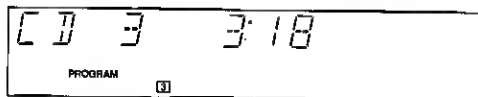
### ■ From the main unit

- 1 Press the CD Input select button.
- 2 ① Turn the jog dial to select the track you want to play.

The former display will return if you allow 8 seconds to elapse before accomplishing the next operation. If this happens, repeat this step.

- ② Press SET.

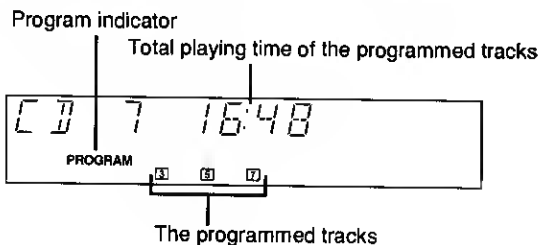
The program indicator will appear on the display.



The display will show the programmed order for about 1 second.

Then it will display the whole play time.

- 3 Repeat step 2 for each track you wish to program in sequence.

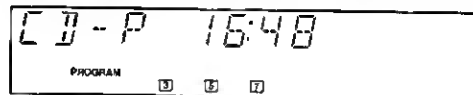


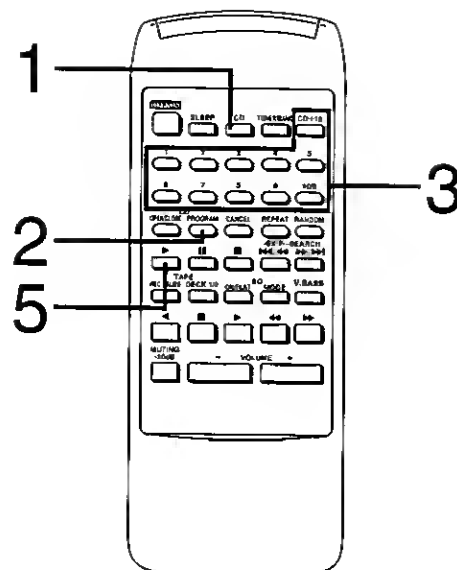
- 4 Press the CD play button.

Program play will begin from the first track you programmed.

### ■ Program memory function

The player will retain the programmed tracks until you cancel the program play mode by opening the compact disc tray or by pressing the cancel button. (See page 28.) The player will retain the programmed tracks approximately for 2 weeks, even if there is a power interruption.





■ From the remote control

1 Press the CD input select button.

2 Press PROGRAM.

The program indicator will appear on the display.

3 Press the numeric buttons to select the track numbers.

To select a track between 1 and 10:

Press the appropriate numeric button 1–10/0 directly.

To select a two-digit track over 10:

First press +10 and then a numeric button 1–10/0.

For example:

Track no. 13: →

Track no. 20: → →

Track no. 35: → → →

**Notes:**

- ERROR appears on the track display when you program a nonexistent track.
- FULL appears on the track display when you have tried to program more than 36 tracks to indicate that you cannot program more than 36 tracks.
- appears on the time display when the total play time of the programmed tracks exceeds 99 minutes. In this case, the display will not show the total time.

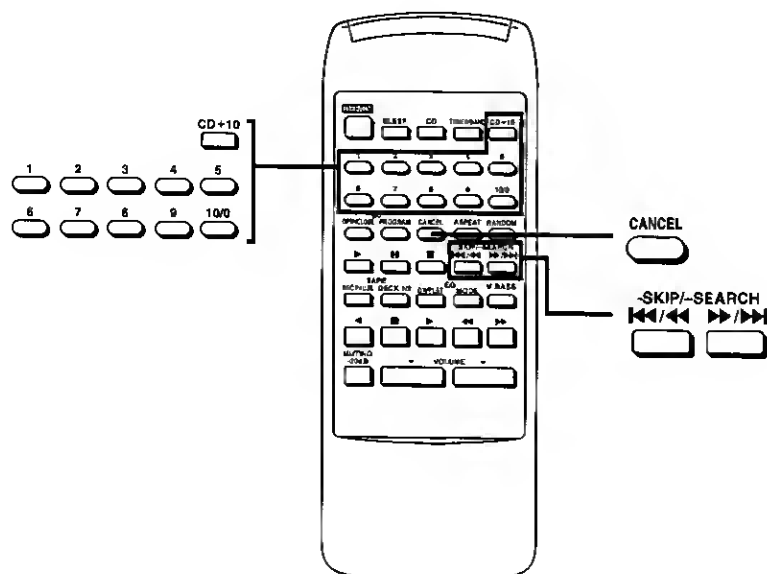
4 Repeat step 3 until you have completed the program.

5 Press the CD play button.

The program play will begin from the first track you programmed.

## Listening to Compact Discs (continued)

### Program play (continued)



- To confirm the program

(Also available from the main unit)

**While in stop mode, press the skip/search button.**



Each time you press the skip/search button, the display shows the next track in the program sequence.

■ **To add the entry**

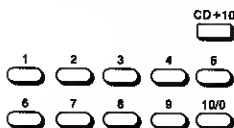
You can add the entry in the stop mode.

### From the main unit

In the stop mode, turn the jog dial to select the desired track and then press SET.

### From the remote control!

In the stop mode, press the desired numeric button.



## ■ Changing the program

(Also available from the main unit)

**Press CANCEL in the stop mode.**



**Each time you press the cancel button, you will cancel the last track in the programmed sequence.**

**Example:**

When you have programmed tracks 3, 5 and 7, the tracks will be canceled in the sequence of 7, 5 and 3.

**Note:**

It is not possible to clear only the tracks located in the middle program (such as the third of five tracks).

■ **To cancel program play**

1. Press **PROGRAM** on the remote control in the stop mode.  
The program indicator will flash for several seconds.
2. Press **CANCEL** while the program indicator is flashing.  
The program indicator goes out and the program is cleared.

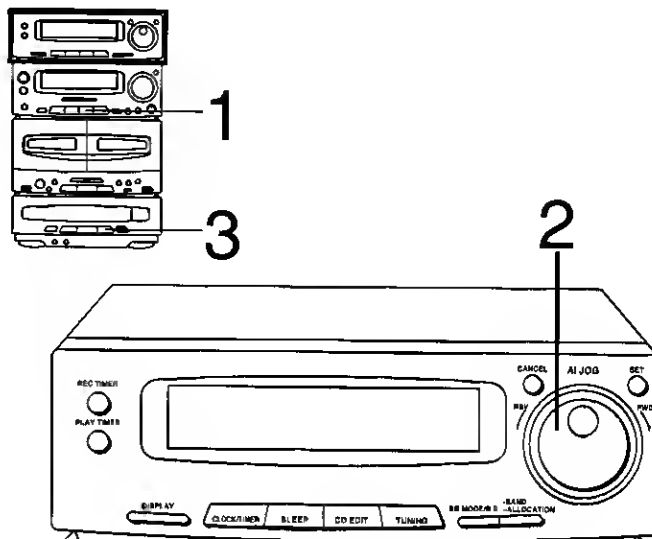
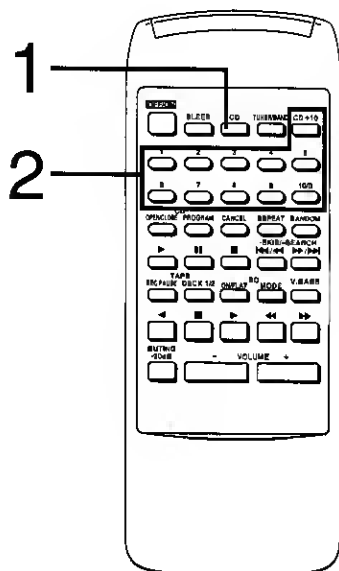
**Note:**

When you press OPEN/CLOSE to open the disc tray, the program play is cancelled.

## Direct access play

Direct access allows you to start sequential play from a specific track to the last track on the disc.

Make sure the player is not in the program mode when using direct access.



### ■ From the remote control

- 1 Press the CD Input select button.
- 2 Press a numeric button to select the desired track number.

To select a track between 1 and 10:

Press the appropriate numeric button 1-10/0 directly.

To select a two-digit track over 10:

First press +10 and then a numeric button 1-10/0.

For example:

Track no. 13: →

Track no. 20: → →

Track no. 35: → → →

Play will start with the track you select, continue through the last track on the disc, and automatically stop at the end.

### ■ From the main unit

- 1 Press the CD Input select button.
- 2 Turn the jog dial to select the track where you want to begin play.

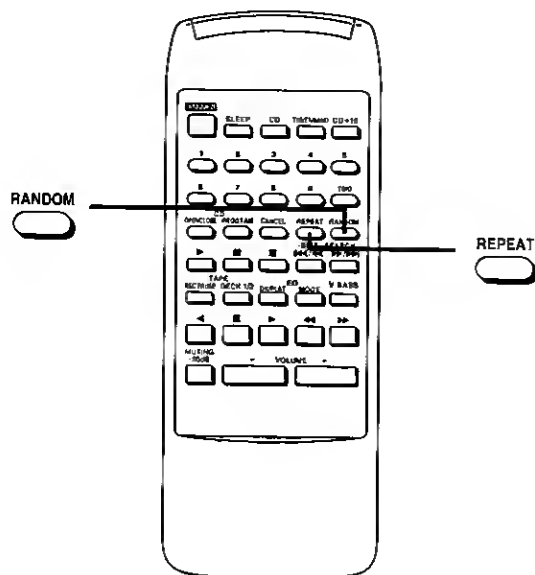


- 3 Press the play button.

Play begins with the selected track, continues to the last track, and automatically stops.

# Listening to Compact Discs (continued)

## Special features



### ■ Random play

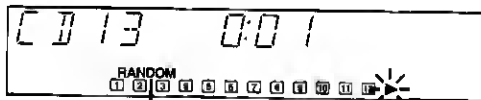
(Only from the remote control)

The microcomputer will automatically select a sequence of tracks to be played in random order.

**Press RANDOM on the remote control while player is in the stop mode.**

The random indicator will light on the display, and random play will start.

RANDOM



Random indicator

### Note:

You cannot use random play in combination with program play.

### ■ To cancel random play

**Press RANDOM once again to end random play.**

The random indicator on the display will go out.

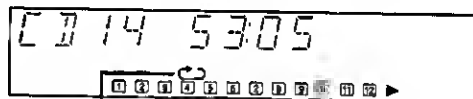
### ■ Repeat function

(Only from the remote control)

This function repeats the play of all tracks.

**Press REPEAT before or during play.**

REPEAT



Repeat indicator will appear on the display.

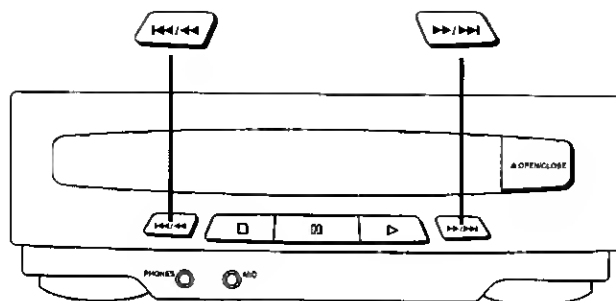
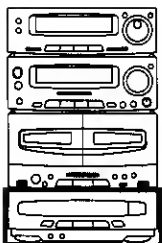
If you press REPEAT while program play is taking place, the player will repeat only the programmed tracks.

You can enjoy the same track over and over if you press REPEAT when only one track is programmed.

### ■ To cancel repeat play



**Press REPEAT once again.**


The repeat indicator on the display will go out.




### ■ Skip function



(Also available from the remote control)

**While in play mode, press  or  skip button momentarily until you locate the desired track.**

 Pickup skips forward.  
The pickup will skip as many tracks as the number of times you press the button.

 Pickup skips backward.  
Pressing this button once moves the pickup to the beginning of the track being played. If you press the button repetitively, the pickup will skip as many tracks as the number of times you press the button.

#### **In program or random play mode:**


- If you press the  skip button during program or random play, the pickup will skip from one track to another in the programmed sequence.
- If you press the  skip button during random play, the pickup doesn't skip to the previous track.

### ■ Search function

(Also available from the remote control)

**While in play mode, press and hold one of the search buttons. Release the button when you have reached the desired point.**

 Pickup moves forward.

 Pickup moves backward.

- At first, the pickup will move slowly and then rapidly if you hold the button on.
- The volume level will drop to about 1/4 of normal.

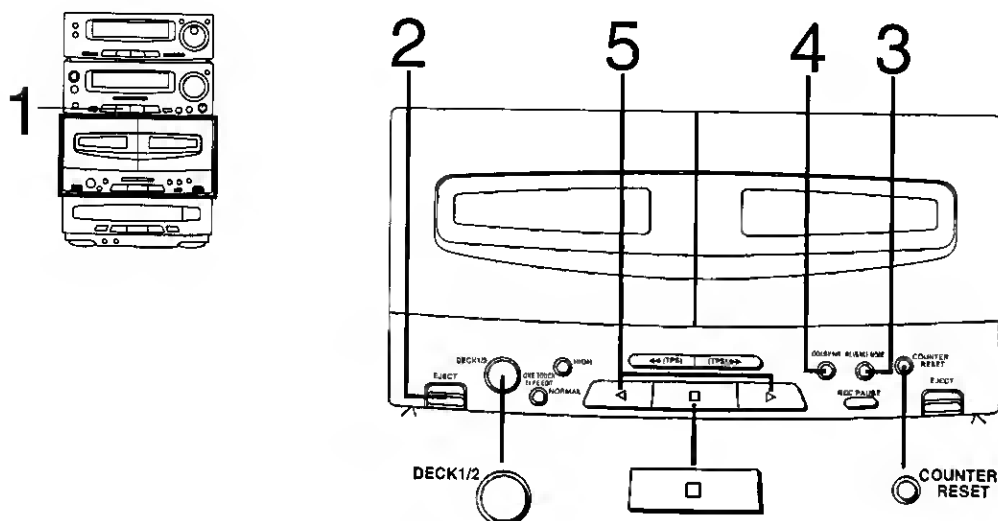
#### **In program and random play modes:**

A search will take place only within the track being played.

# Listening to Tapes

You can use either deck 1 or deck 2 for tape playback by following the same steps.

## To play back prerecorded cassettes



**1 Press the TAPE Input select button.**

**2 Press EJECT, and then Insert the cassette you wish to play.**

- Insert the cassette with the exposed tape facing down.
  - You can use normal, chrome and metal tapes for playback. This deck automatically identifies the kind of tape loaded, and sets the equalization accordingly. (Auto tape selector function)
  - To reset the tape counter to 000, first press the DECK 1/2 to select the deck you are going to use and press the counter reset button.
- When the system reverses to play the reverse side of the tape, the counter will count backward (000, 999, 998...).

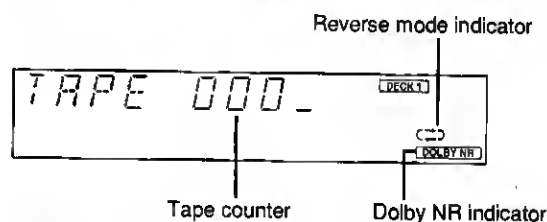
**3 Press REVERSE MODE.**

Each time you press, the display will show one of three reverse mode indicators.

- ↔ : The player plays one side only, and then the tape automatically stops.
- ↔ : The player plays both sides, and then the tape automatically stops. If you start playback in the reverse mode, the player plays back only one side.
- ↔ : **When you load a cassette into only one of the two decks;**  
The player plays both sides of the tape repeatedly until you press the stop button.  
**When you load cassette into both decks;**  
The player plays both sides (forward and reverse) of the tape in deck 1, and then both sides of the tape in deck 2. Playback will continue until you press the stop button.

**4 Press DOLBY NR if the cassette you want to play was recorded with Dolby noise reduction.**

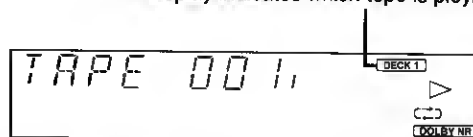
- The Dolby NR indicator lights.
- If the tape was not recorded in a Dolby NR mode, press DOLBY NR again. The Dolby NR indicator will go out.



**5 Press one of the play buttons to start playback.**

- (Also available from the remote control)
- ▷: The forward side (front side) will play.
  - ◁: The reverse side will play.

The display indicates which tape is playing.



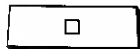
- When you load cassettes in both decks, press DECK 1/2 to select the deck you want to use.
- You can reverse the direction of play manually during playback by pressing the opposite playback button.




### ■ To stop playback

(Also available from the remote control)

**Press the stop button.**




### ■ Full auto-stop

When the tape reaches the end, the tape transport will automatically stop. However, if you have set the reverse mode select button to  in the playback mode, the auto-stop function will not operate.

### ■ About the Dolby Noise Reduction system

Using Dolby NR reduces tape hiss in the high-frequency range. It boosts the level of the high-frequency program content during recording, and lowers it by the same amount during playback, simultaneously reducing high-frequency noise incurred during the recording process.

This system has the Dolby B-type of noise-reduction system. With Dolby B, noise is reduced to about one-third. If you are playing a tape that was recorded with Dolby NR, use the Dolby NR mode during playback.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.  
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

### ■ About one touch play back

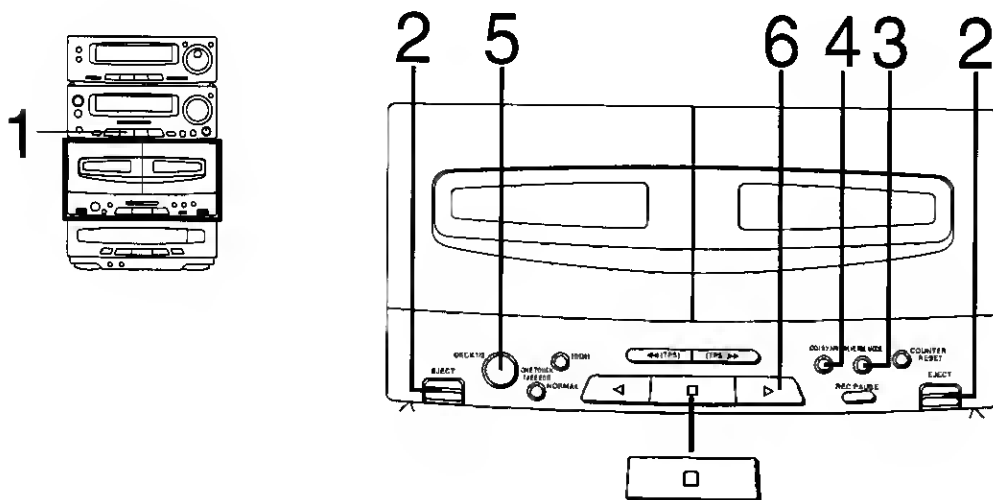
From the power standby condition, you can listen to tapes by pressing one of the play buttons (except the condition during TIMER/TIMER REC Indicator lights).

When tapes have been loaded in both decks, deck 2 has priority.



# Listening to Tapes (continued)

## Listening to two tapes consecutively



(Steps 5 and 6 also available from the remote control)

- 1 Press the TAPE input select button.**
- 2 Load cassettes in decks 1 and 2.**  
Load with the side that you wish to listen to first facing you in deck 1.

- 3 Press REVERSE MODE to set the  mode.**

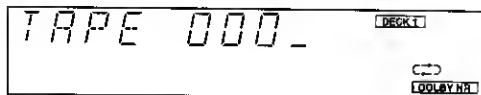


- 4 Press DOLBY NR if the cassette you want to play was recorded with Dolby noise reduction.**

The Dolby NR indicator will appear on the display when Dolby NR is on.

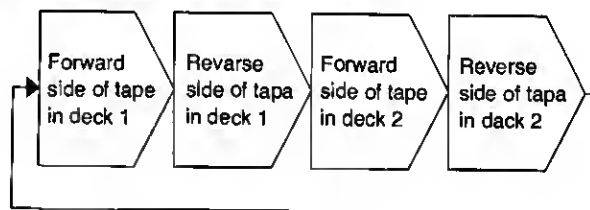
- 5 Press DECK 1/2 to select deck 1.**

The deck 1 indicator will appear.



- 6 Press the forward-side playback () button to start playback.**

The two tapes will play back as follows:

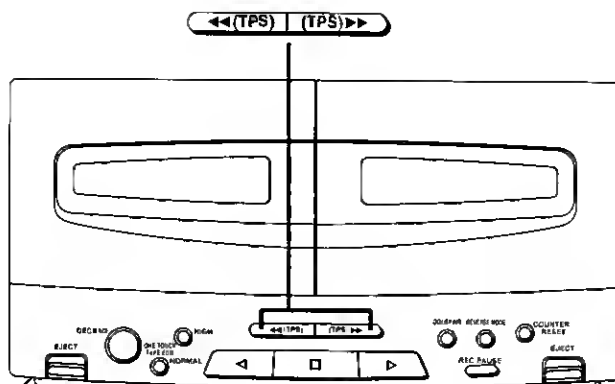
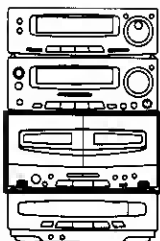


### ■ To stop the tape midway

Press the stop button.



- You can also start playback from a position other than the forward side of the tape in deck 1 by pressing the opposite playback button.
- When you load cassettes in both decks, the deck 1/2 indicator will show which deck you loaded last.
- When you switch on the power, the deck 2 indicator will always appear.



### To find the beginning of a program (TPS: tape program sensor)

(Also available from the remote control)

**Press the fast-forward/rewind (TPS) button while the tape is playing.**

**If the forward side (▷) of the tape is playing:**

**(TPS)▷▷** : The tape will play from the beginning of the next program.

**<<(TPS)** : The tape will rewind to the beginning of the present program. Then the program will play again.

**If the reverse side (◁) of the tape is playing:**

The reverse of the above will take place.

While a TPS operation is taking place, the play indicator will flash.

#### Notes:

The TPS function may sometimes fail to operate correctly in the following situations:

- When the interval between programs (dead space) is less than 4 seconds.
- When you are playing a tape recorded from a microphone and there is no dead space between tape programs.
- When there is a particularly low-level passage or silent passages in the middle of a program.
- When less than 10 seconds remain until the end of the present program or start of the next program.
- When a tape has been recorded with fade-ins and fade-outs.

### To fast forward or rewind the tape

(Also available from the remote control)

**Press the fast-forward/rewind (TPS) button while the tape is stopped.**

The tape will start moving at high speed in the direction of the arrow (◁◁, ▷▷) regardless of which direction mode it is in.

To fast forward or rewind the tape while you are playing a tape in another deck, press DECK 1/2 button to switch to the nonplaying deck, and then press the fast forward or rewind button.

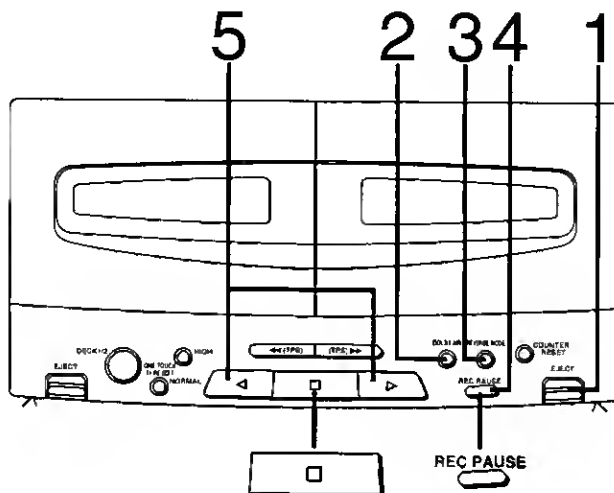
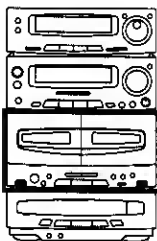
# Making a Recording (Deck 2 only)

## To record from the radio or external source

Although you can record a compact disc using the following procedures, we recommend that you use the compact disc edit-recording procedure to record a compact disc.

(See "Edit-Recording from Compact Discs" on pages 38–44.)

To make a tape-to-tape recording, see "Tape-to-Tape Recording" on page 45.



(Steps 4 and 5 also available from the remote control)

Switch on the power.

### 1 Press the deck 2 eject button to load a cassette in deck 2.

- You cannot record on the leader tape (the first few revolutions) so take up the leader tape in advance.
- You can use normal, chrome and metal tapes for recording. This deck automatically identifies the kind of tape loaded, and sets the bias (for recording) and equalization accordingly.

(Auto tape selector function)

### 2 When making a Dolby NR recording, press the DOLBY NR so that the Dolby NR indicator appears.

### 3 Press REVERSE MODE to select the reverse mode you want to use.

- ↔ : One side will record, and then the tape will stop automatically.
- ↔↔ : Both sides will record (forward side→reverse side) and then the tape will stop automatically.

### 4 Press REC PAUSE to put the cassette deck into the recording standby mode; then press the Input select button to select your desired sound source.

The tape direction indicators will flash to show the direction in which you can record.



Recording indicator

### 5 Press one of the playback buttons to start recording and start playing the source to be recorded.

- ▶ : When recording on either the forward side or both sides.
- ◀ : When recording only on the reverse side.

Your attention is drawn to the fact that recording pre-recorded tapes or discs on other published or broadcast material may infringe copyright laws.

### ■ When you record from the compact discs

**After pressing REC PAUSE;**

**Press the CD input select button and the CD play button.**

The recording will automatically start when you press the CD play button (Synchro start function).

### ■ To briefly interrupt recording

(Also available from the remote control)

**Press REC PAUSE.**

REC PAUSE



The cassette deck will go into the pause mode.

To resume recording, press the play button corresponding to the direction in which recording is taking place.

### ■ To stop recording

(Also available from the remote control)

**Press the cassette deck stop button.**



### ■ To use the beat proof function

**Press FM MODE/B.P on the tuner section.**

FM MODE/B.P



When recording an LW/MW broadcast, use the beat proof button to reduce unwanted "beat" signals (whistle). Press the FM mode/beat proof button to whichever position (BP 1, BP 2 or BP 3) best reduces these beat signals. The display will indicate which position is in effect.

### ■ To erase a recorded tape (Deck 2)

When you make a new recording on a previously recorded tape, the new recording will automatically erase what was previously recorded. To erase a tape without making a new recording, follow the steps below.

(Steps 5 and 6 also available from the remote control)

- 1) Press the TAPE input select button on the amplifier.
- 2) Press DOLBY NR so that Dolby NR is turned off.
- 3) Insert the recorded tape into the cassette holder of deck 2.
- 4) Select the desired reverse mode.
- 5) Press REC PAUSE.
- 6) Press the playback button corresponding to the side to be erased.

### ■ To record with straight sound tone

Please complete the next steps.

- Press EQ ON/FLAT on the amplifier section to light the EQ FLAT indicator.
- Press SURROUND to disappear the SURROUND indicator.
- Press KARAOKE to disappear the KARAOKE indicator.

### ■ To record with desired tone

You can make a recording with the equalizer effect.

When playing back such recordings, press EQ ON/FLAT on the amplifier section to set "EQ FLAT".

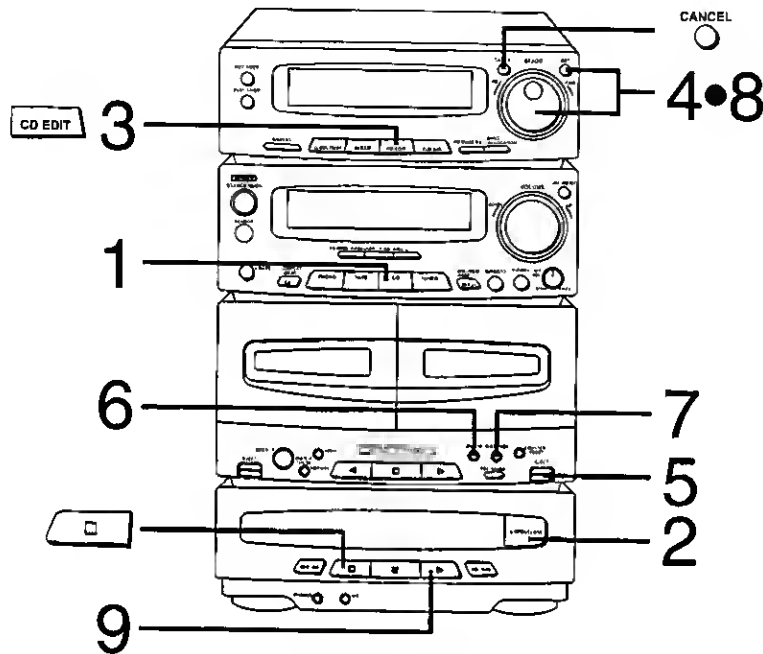
# Edit-Recording from Compact Discs

You can edit-record up to 36 tracks.

Using the edit-recording safeguards against a break in the continuity of the sound when the recording changes from one side of the tape to the other.

## Sequential CD recording (ALBUM)

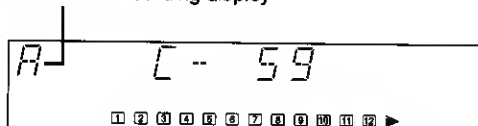
The system calculates and displays in advance the length of the tape required to accommodate the recording of all the tracks on the compact disc in their original sequence. The tracks are then recorded in their original sequence.



Switch on the power.

- 1 Press the CD Input select button.
- 2 Press OPEN/CLOSE on the CD player to load s disc.
- 3 Press CD EDIT.
- 4 ① Turn the jog dial to select ALBUM.  
The ALBUM, PROGRAM, and FIT displays will appear in sequence.  
② Press SET.  
The length of the tape required to record all the tracks appears on the display.

Album edit-recording display



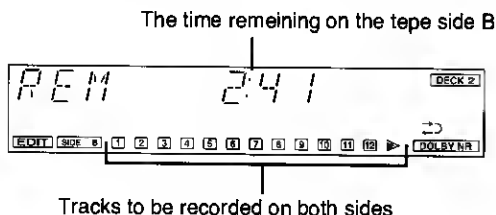
In this case, you would need a C-59 or longer tape.

If the compact disc has 37 or more tracks, ERROR appears first and then the system will automatically establish the program edit-recording mode. (See page 42.) Program up to 36 tracks in the program edit-recording mode, and proceed with the recording.

- 5 Load a cassette in deck 2.  
Since, in this case, you need a tape that is at least 59 minutes long, insert a C-60 tape.  
Check that the tape's erasure prevention tabs are intact. Then insert the cassette into deck 2.
- 6 Press DOLBY NR when making s Dolby NR recording.
- 7 Press REVERSE MODE to select the "↔" reverse mode for automatic two-sided recording.
- 8 ① Turn the jog dial to specify the length of the tape you are using.

## ② Press SET.

- The system assigns tracks to both sides of the tape and displays the results.
- The time remaining on both sides of the tape appears on the display.



To confirm the time remaining and the tracks to be recorded on tape side A, press CD EDIT. Each time you press this button, the display will change as follows:

1. The time remaining and the tracks to be recorded on tape side A
2. The time remaining and the tracks to be recorded on tape side B
3. The time remaining and the tracks to be recorded on both sides of the tape

## 9 Press the CD play button for automatic recording.

The compact disc player automatically scans for the peak (highest) level of the entire disc (ATLS; see right.) and then recording will start.

When edit-recording has finished, the cassette deck automatically enters the recording standby mode.

If you want to change something you have set, or if an error has occurred, press the cancel button.

The system will return to the previous setting mode.

## ■ About Automatic Tape Level Setting (ATLS)

Since compact discs generally have a wide dynamic range, carefully setting of the record level is required to achieve the best recording results.

This system automatically scans (fast search) for the peak (highest) level of the entire disc, and the tape deck set the appropriate recording level. During this period, the peak level sound will not be heard.

## ■ To cancel album edit-recording

(Also available from the remote control)

Press the CD stop button twice.



CLEAR will appear on the display.

## ■ To record with straight sound tone

Please complete the next steps.

- Press EQ ON/FLAT on the amplifier section to light the EQ FLAT indicator.
- Press SURROUND to disappear the SURROUND indicator.
- Press KARAOKE to disappear the KARAOKE indicator.

## ■ To record with desired tone

You can make a recording with the equalizer effect.

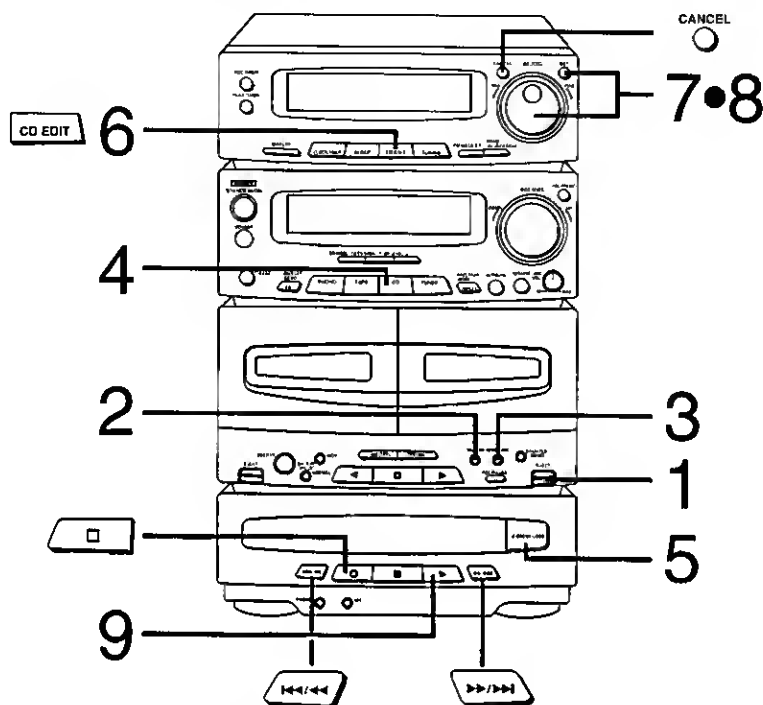
When playing back such recordings, press EQ ON/FLAT on the amplifier section to set "EQ FLAT".

# Edit-Recording from Compact Discs

(continued)

## Tape length priority recording (FIT)

When the tape is not long enough to record all the tracks on a compact disc in their original sequence, it is sometimes possible to record all the tracks by rearranging their sequence. The built-in microcomputer calculates whether this is possible and specifies track sequence.



- 1 Press the deck 2 eject button to load a cassette in deck 2.

Check that the tape's pressure prevention tabs are intact.

- 2 Press DOLBY NR when making a Dolby NR recording.

- 3 Press REVERSE MODE to select the "↔" reverse mode for automatic two-sided recording.

- 4 Press the CD input select button.

- 5 Press OPEN/CLOSE on the CD player to load a disc.

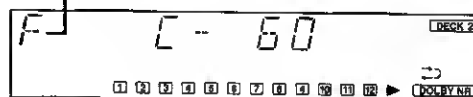
- 6 Press CD EDIT.

- 7 ① Turn the jog dial to select FIT.

The ALBUM, PROGRAM, and FIT displays will appear in sequence.

- ② Press SET.

Fit edit-recording display

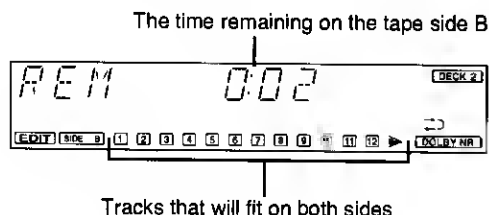




## 8 ① Turn the jog dial to select the length of the tape you are using.

### ② Press SET.

The system assigns the tracks to both sides of the tape and displays the results.



To confirm the time remaining and the tracks to be recorded on tape side A, press CD EDIT.

Each time you press the button, the display will change as follows:

1. The time remaining and the tracks to be recorded on tape side A
2. The time remaining and the tracks to be recorded on tape side B
3. The time remaining and the tracks to be recorded on both sides of the tape

#### Note:

When it is not possible to record all the tracks even by rearranging the track sequence, the OVER display will appear.

## 9 Press the CD play button for automatic re-cording.

The compact disc player automatically scans for the peak (highest) level of the entire disc (ATLS; see page 39.) and then recording will start.

When edit-recording has finished, the cassette deck automatically enters the recording standby mode.

If you want to change something you have set, or if an error has occurred, press the cancel button.

The system will return to the previous setting mode.

## ■ To cancel tape length priority recording (fit edit-recording)

(Also available from the remote control)

Press the CD stop button twice.



The CLEAR display will appear.

## ■ To confirm the play sequence

(Also available from the remote control)

You can confirm the play sequence on the display by pressing the skip/search button in the stop mode.

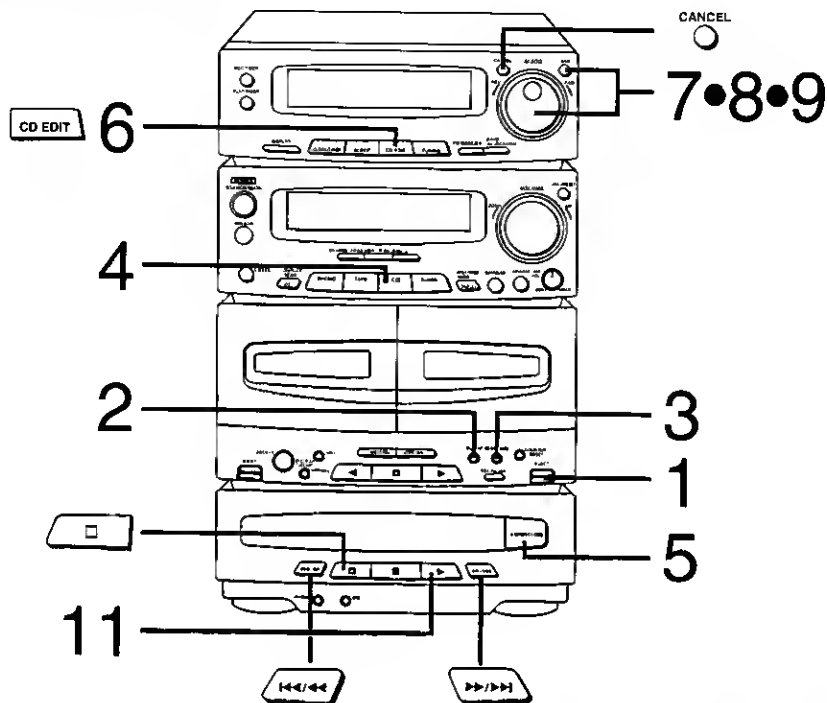


# Edit-Recording from Compact Discs

(continued)

## Program edit-recording (PROGRAM)

You can specify the tracks to be recorded in the desired sequence while checking on the display how much time is left over.



- 1 Press the deck 2 eject button to load a cassette in deck 2.

Check that the tape's erasure prevention tabs are intact.

- 2 Press DOLBY NR when making a Dolby NR recording.

- 3 Press REVERSE MODE to select the "↔" reverse mode for automatic two-sided recording.

- 4 Press the CD input select button.

- 5 Press OPEN/CLOSE on the CD player to load a disc.

- 6 Press CD EDIT.

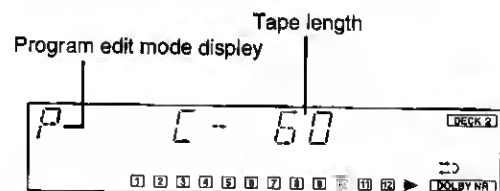
- 7 ① Turn the jog dial to select PROGRAM.

The ALBUM, PROGRAM, and FIT displays will appear in sequence.

- ② Press SET.

- 8 ① Turn the jog dial to select the length of the tape you are using.

You can specify the length by the minute.



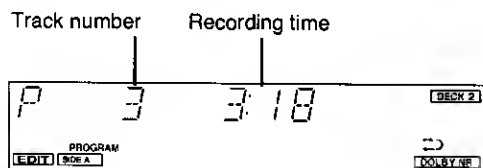
- ② Press SET.

The time remaining on both sides of the tape will appear on the display.



**9 ① Turn the jog dial to assign the tracks in sequence.**

You can also assign the tracks using the button on the numeric button on the remote control.  
(See "Program play" on page 27 for detailed instructions.)



**② Press SET.**

**10 Repeat step 9 to complete the program.**

If there is no more time left on tape side A, the system will select tape side B automatically.

**11 Press the CD play button to start recording.**

The compact disc player automatically scans for the peak (highest) level of the entire disc (ATLS; see page 39.) and then recording will start.

When edit-recording has finished, the deck automatically enters the recording standby mode.

If you want to change something you have set, or if an error has occurred, press the cancel button.  
The system will return to the previous setting mode.

**■ To cancel program edit-recording**

(Also available from the remote control)

**Press the CD stop button twice.**



The CLEAR display will appear.

**■ To confirm the play sequence**

(Also available from the remote control)

**You can confirm the play sequence on the display by pressing the skip/search button in the stop mode.**

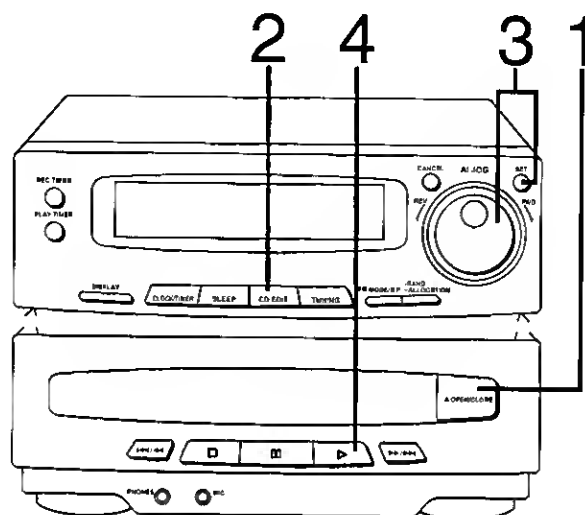
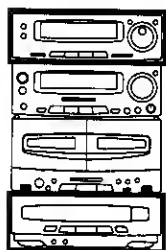


# Edit-Recording from Compact Discs

(continued)

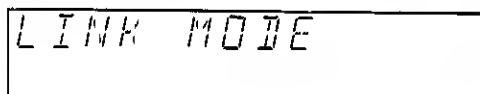
## To record from another disc on the remaining blank portion of the tape (LINK)

The automatic link function allows you to link tracks from another disc on the remainder of the tape.



**1** Press OPEN/CLOSE to replace the disc.

**2** Press CD EDIT.



**4** Press the CD play button for automatic recording.

The compact disc player automatically scans for the peak (highest) level of the entire disc (ATLS) and then recording will start.

**5** If you record from more discs, follow the above procedure.

### ■ To cancel the link-edit recording

(Also available from the remote control)

**Press the stop button in the deck section.**

### Note:

When stopped the compact disc play during link edit recording, the editing mode will be cancelled.

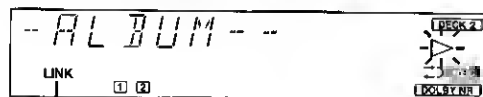
Never release the recording standby condition of the deck section by pressing stop button.

(The editing mode will be cancelled.)

**3** ① Turn the jog dial to select the desired editing mode.

ALBUM: Recording in sequence

PROGRAM: As desired tracks end sequence



Link edit indicator

● It is not possible to select FIT.

**② Press SET.**

**When ALBUM recording is performed:**

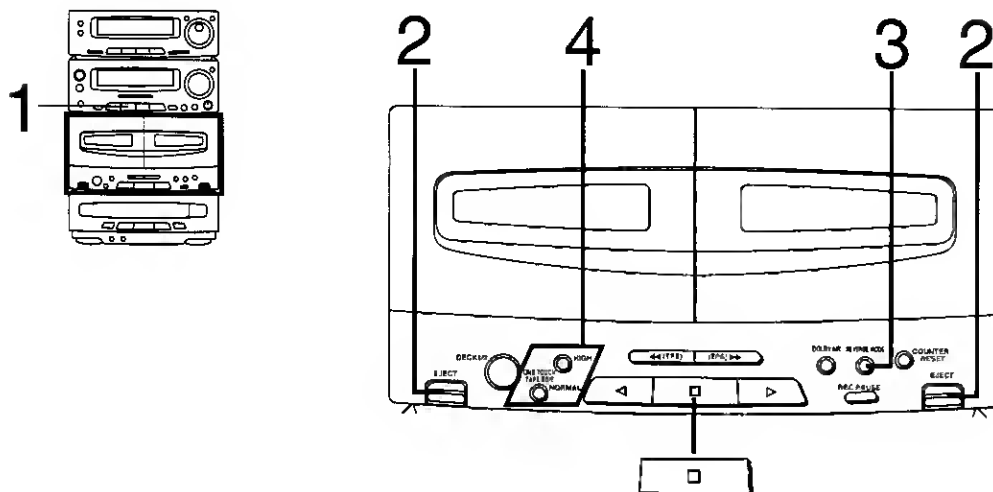
The unit will specify the tracks and display the result.

**When PROGRAM recording is performed:**

Specify the track and sequence using the jog dial and SET button.

# Tape-to-Tape Recording

The recording level and the noise reduction effect of the original (playback) tape will be recorded on the new tape just as they were in the original recording.

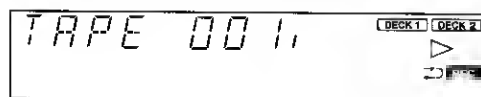


- 1 Press the **TAPE** input select button.
- 2 Insert the playback cassette into deck 1 and the cassette you are recording on (the editing tape) into deck 2.
  - Advance the leader tape three or four revolutions.
  - You can also use the different types of tapes for each deck 1 and 2.

- 3 Select the desired reverse mode.
  - : Single-sided recording (forward side only)
  - ↔ : Two-sided recording (forward side→reverse side)

- 4 Press one of the one-touch tape edit buttons (**NORMAL** or **HIGH**) to select editing speed.
  - NORMAL:** When you wish to monitor the sound while recording
  - HIGH:** When you wish to record at a high speed (about 1.7 times normal speed)

The synchro start function starts tape-to-tape recording.



If you wish to monitor the sound of the tape with Dolby NR, set the Dolby NR switch to the ON position (only for normal speed recording).

## Notes:

- While tape-to-tape recording is in progress, you cannot change the editing speed.
- Some TV sets generate noise that could be recorded during tape-to-tape recording. To prevent the possibility of this, do not use this system close to a TV set.

- **To stop the tape-to-tape-recording**  
(Also available from the remote control)

Press the stop button in the deck section.



Both decks will stop.

- **To record another tape on the remaining blank tape**

When the deck 1 completes playing back and stops, the deck 2 enters the recording standby mode;

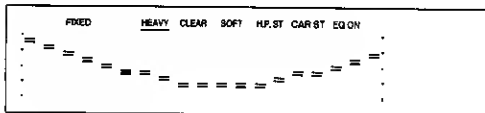
**At that time, replace the original (playback) tape with a new tape. Then press one of the one-touch tape edit buttons.**



## About equalization curves preprogrammed to this unit

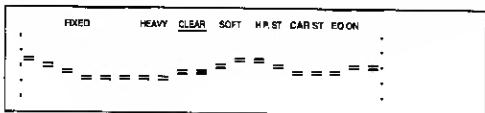
### 1 HEAVY

This curve can be used to add "punch" to rock and other music.



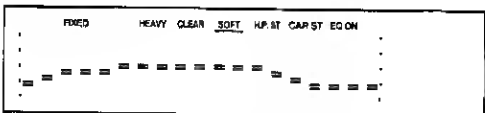
### 2 CLEAR

This curve can be used to clarify the treble range of jazz, etc.



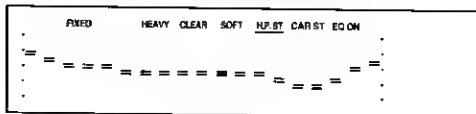
### 3 SOFT

This curve can be used to listen to background music, etc. at a low volume level.



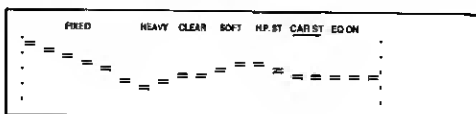
### 4 H.P. ST

This curve can be used to record a tape for playback using the stereo cassette player (Headphones Stereo).



### 5 CAR ST

This curve can be used to record a tape for play back using the car audio system (Car Stereo).



## To change the equalization curve continuously (Demonstration function)

Use this function for reference of the adjustments of equalization curves.

While playing the desired source.

Press and hold EQ - DEMO.

-ON/FLAT  
-DEMO  
EQ

The equalization curves will change in sequence as follows.

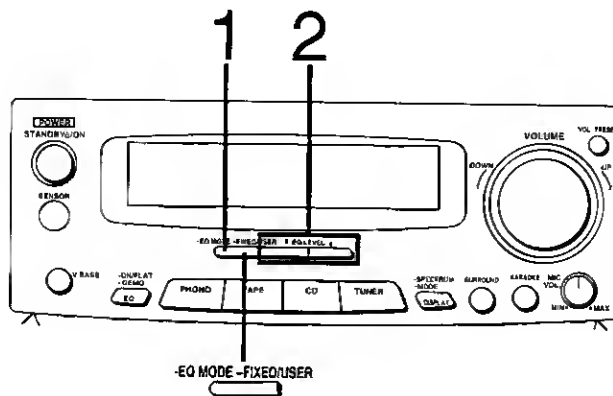
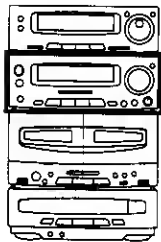
Fixed curve—fixed curve with max. position of equalizer effect—fixed curve with min. position of equalizer effect—fixed curve—Surround sound effect—karaoke effect—V. Bass effect—Fixed curve...

To cancel the demonstration function, press EQ - DEMO momentarily once again.

# Changing the Tone (continued)

## To store a desired equalization curves (USER curve)


You can easily create the desired tone quality by using the sound effect level buttons.



- 1 Press **-EQ MODE -FIXED/USER** momentarily to select the desired equalization curve. Each press of **-EQ MODE -FIXED/USER** advances the equalization curve setting in the following sequence.

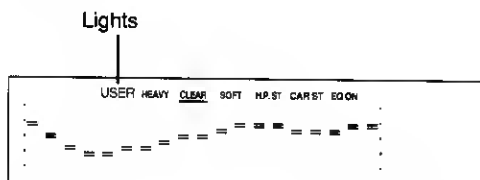
HEAVY → CLEAR → SOFT  
 ↑                      ↓  
 CAR ST ←              H.P. ST

- 2 Press one of **EQ LEVEL** to adjust the equalization effect.

 : To increase the effect

 : To decrease the effect

Once the adjustment has been done, the equalization curves will be automatically stored as the "USER" curve in the unit's memory.



Any adjustment will not affect the FIXED modes.

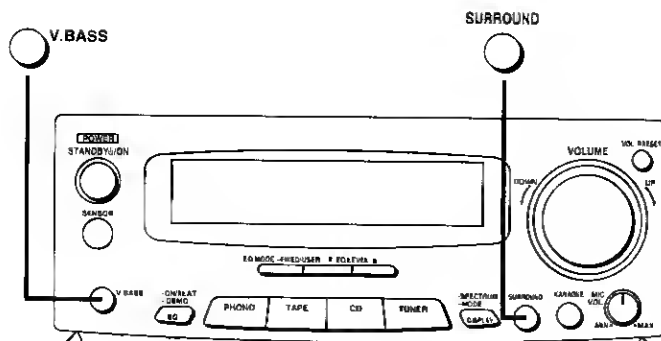
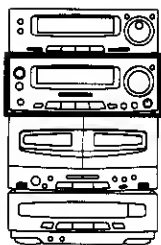
## ■ To retrieve USER curves from the memory

**-EQ MODE -FIXED/USER**

- ① Press **-EQ MODE -FIXED/USER** momentarily to select the desired equalization curve.
- ② Press and hold **-EQ MODE -FIXED/USER** to select USER.

This function is also available from the remote control. Press and hold **MODE** on the remote control to switch **FIXED/USER**.





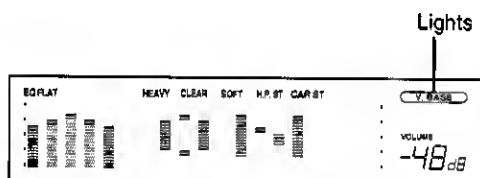
## To listen with augmented bass (V. BASS)

(Also available from the remote control)

**While playing the desired source.  
Press V. BASS to ON.**



V. BASS display will appear.



### Note:

You cannot make a recording with the V. BASS effect.

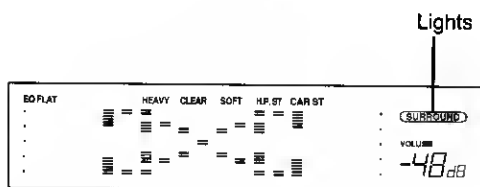
## Producing a "Live" performance sound (SURROUND)

**While playing the desired source.  
Press SURROUND to ON.**

SURROUND



The following display will appear.



- If you connect the surround speakers to this unit, you can enjoy more effective sound.
- You cannot enjoy the surround sound effect with the karaoke function.
- When playing back the tape recorded with the surround sound effect, press SURROUND to go off the surround indicator.

**■ To cancel the V. BASS effect**  
(Also available from the remote control)

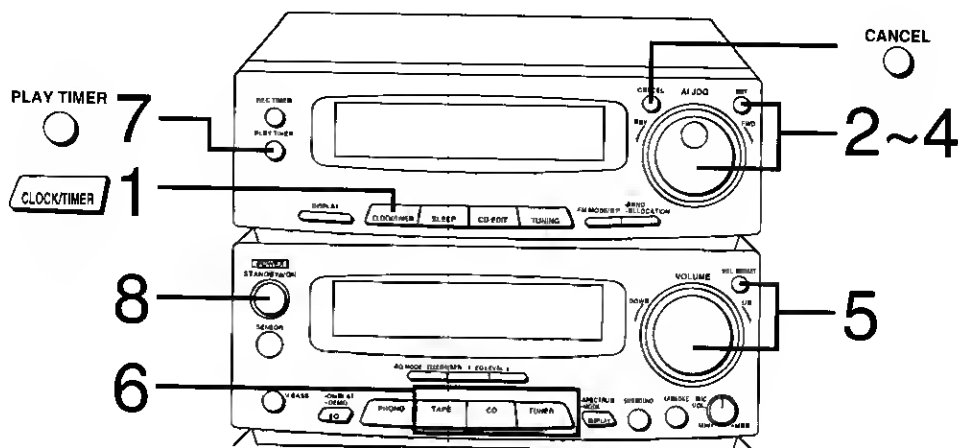
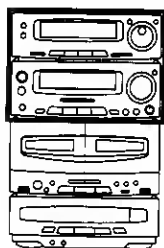
**Press V. BASS once again.**

**■ To cancel the SURROUND effect**

**Press SURROUND once again.**

# Using the Timer

## Setting timer play



Have you read and completed "Setting the Time of Day" on page 19? If not, please complete these sections before continuing.

The following example shows how to set the timer play function for listening from 7:15 to 8:00.

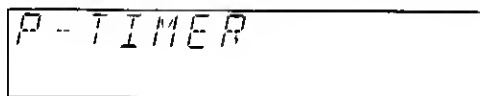
Switch on the power.

**1 Press CLOCK/TIMER.**

**2 ① Turn the jog dial to select P-TIMER.**

P-TIMER will appear on the display, after which the display will show the timer ON and OFF time of 0:00.

• The display will return to what it was previously indicated if you allow 10 or more seconds to elapse before you accomplish the next operation.



**② Press SET.**

The timer ON time of 0 will start flashing.

**3 ① Turn the jog dial to select the hour you wish timer play to begin. In this case, set it on 7.**  
The 7 will flash.



**② Press SET.**

The hour will stop flashing and the minute will flash.

**③ Turn the jog dial to select the minutes you want timer play to begin. In this case, set it on 15.**

The 15 will flash.

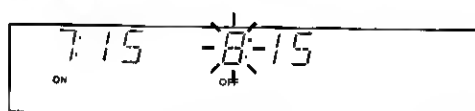


**④ Press SET.**

The minutes will stop flashing and the timer OFF time of 7 will start flashing.

**4 ① Turn the jog dial to select the hour you want timer play to end. In this case, set it on 8.**

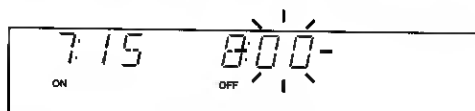
The 8 will flash.



**② Press SET.**

The hour will stop flashing and the minutes will flash.

**③ Turn the jog dial to select the minutes you want timer play to end. In this case, set it on 00.**



**④ Press SET.**

The 00 will stop flashing, and the display will change to the previous display.

## 5 ① Press VOL. PRESET to set the volume level for timer play.

The volume level display will flash.



## ② Adjust the volume level using the volume level control.



## ③ Press VOL. PRESET again.

- This presets the volume level into memory.

## 6 Press one of the input select buttons.

**For timer play on the CD player:**

Press the CD input select button.

You can use timer play for sequential play or program play.

For program play, specify the desired tracks.

**For timer play on the tuner:**

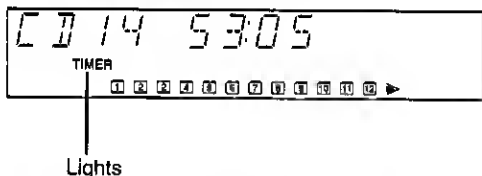
Press the TUNER input select button, select the desired band, and tune in a station.

**For timer play on the tape:**

Press the TAPE input select button.

You can operate both decks 1 and 2 by the timer. When you load cassettes in both deck 1 and deck 2, deck 1 has priority and plays first.

## 7 Press PLAY TIMER.



The timer indicator will appear on the display.

## 8 Press POWER STANDBY /ON to switch the power to standby mode.

Play will start at the set time.

**To listen to the system after you have set the timer but before timer play has taken place:**

Press the power switch to on and select the desired source. After you have finished listening, return the system to the timer setting mode. Even if you change the volume level after presetting the volume level for the timer play, the timer play will start with the preset volume level.

### Notes:

- If the power is on, the timer will not function. The system must be in the standby mode.
- If you are using the timer to play a compact disc, do not open the disc holder if you have already programmed tracks. This will cancel the program and play will start from the first track.

■ When you have made a wrong setting on steps 1 to 4 (on page 50)

Press CANCEL.

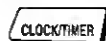
CANCEL



The display will return to the previous step.

■ To confirm timer play

Press CLOCK/TIMER in the power standby mode.



Each time you press this button the display will change as follows:

1. P-TIMER → ON time and OFF time
2. The source you selected

■ To cancel timer play

Press PLAY TIMER.

PLAY TIMER



The play timer indicator will go out.

The timer play will not occur, but the time ON/OFF setting for the timer play will remain in the memory.

■ To change the timer setting

1. Press PLAY TIMER to go off the timer indicator.
2. Operate once again from step 1.

■ To change the source only

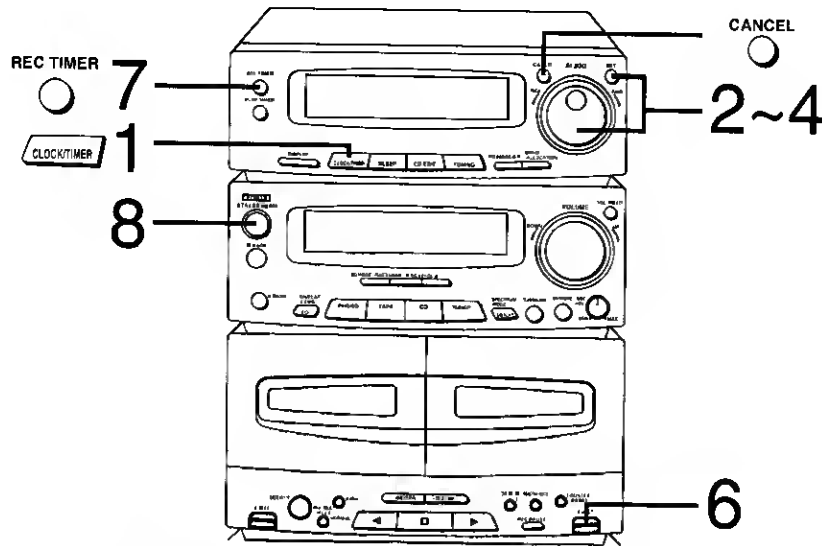
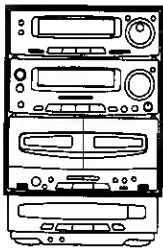
1. Press PLAY TIMER to go off the timer indicator.
2. Select the desired source.
3. Press PLAY TIMER to light the timer indicator.
4. Press the power switch to be in the standby mode.

■ To use the play timer everyday

If you don't change the timer setting, the timer play will start with the preset condition (in the standby mode only).

# Using the Timer (continued)

## Setting timer recording



Have you read and completed "Setting the Time of Day" on page 19? If not, please complete these sections before continuing.

The following example shows how to set the timer recording function for recording a broadcast from 18:30 to 20:00.

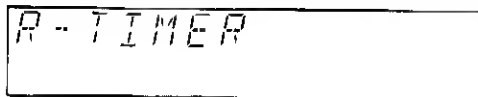
Switch on the power.

**1 Press CLOCK/TIMER.**

**2 ① Turn the jog dial to select R-TIMER.**

R-TIMER will appear on the display, after which the display will show the timer ON and OFF time of 0:00.

•The display will return to what it was previously indicated if you allow 10 or more seconds to elapse before you accomplish the next operation.

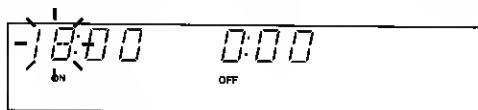


**② Press SET.**

The timer ON time of 0 will start flashing.

**3 ① Turn the jog dial to select the hour you wish timer recording to begin. In this case, set it on 18.**

The 18 will flash.



**② Press SET.**

The hour will stop flashing and the minute will flash.

**③ Turn the jog dial to select the minutes you want timer recording to begin. In this case, set it on 30.**

The 30 will flash.

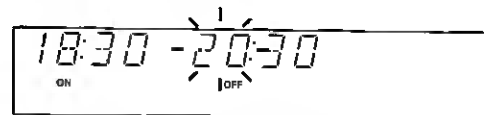


**④ Press SET.**

The minutes will stop flashing and the timer OFF time of 18 will start flashing.

**4 ① Turn the jog dial to select the hour you want timer recording to end. In this case, set it on 20.**

The 20 will flash.



**② Press SET.**

The hour will stop flashing and the minute will flash.

**③ Turn the jog dial to select the minutes you want timer recording to end. In this case, set it on 00.**



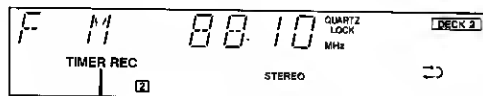
**④ Press SET.**

The 00 will stop flashing, and the display will change to the previous display.


**5 Press the TUNER input select button and tune in the station whose broadcast you want to record.**

**6 Load a cassette in deck 2.**  
Select the Dolby NR mode and reverse mode.  
Please note that the timer recording will start with forward direction.

**7 Press REC TIMER.**



The timer recording indicator will appear on the display.

**8 Press POWER STANDBY /ON to switch the power to standby mode.**  
Recording will start at the set time.

**To listen to the system after you have set the timer but before timer recording has taken place:**

Press the power switch to on and select the desired source. After you have finished listening, return the system to the timer setting mode. If you are listening to a tape, using deck 1 is recommended.

**Notes:**

- After the timer recording is completed, the setting still remains in the system's memory. So after recording, it is recommended to cancel this mode by pressing REC TIMER to prevent the unexpected recording.
- If the power is on, the timer will not function. The system must be in the standby mode.
- While the timer recording is operating, the volume level is automatically -- dB. If you wish to monitor the sound, adjust the volume level with the volume level control.
- It is not possible to set timer recording and timer play simultaneously. (For example, it is not possible to timer record a program in the middle of night, and then wake up by timer play the next morning.)

■ When you have made a wrong setting on steps 1 to 4 (on page 52)

**Press CANCEL.**



The display will return to the previous step.

■ To confirm timer recording

**Press CLOCK/TIMER in the power standby mode.**



Each time you press this button, the display will change as follows:

1. R-TIMER → ON time and OFF time
2. The source you selected

■ To cancel timer recording

**Press REC TIMER.**



The timer recording indicator will go out. The timer recording will not occur, but the time ON/OFF setting for the timer recording will remain in the memory.

■ To change the timer setting

1. Press REC TIMER to go off the timer recording indicator.
2. Operate once again from step 1.

■ To change the source only

1. Press REC TIMER to go off the timer recording indicator.
2. Select the desired band and station.
3. Press REC TIMER to light the timer recording indicator.
4. Press the power switch to be in the standby mode.

■ To stop the timer recording on the way

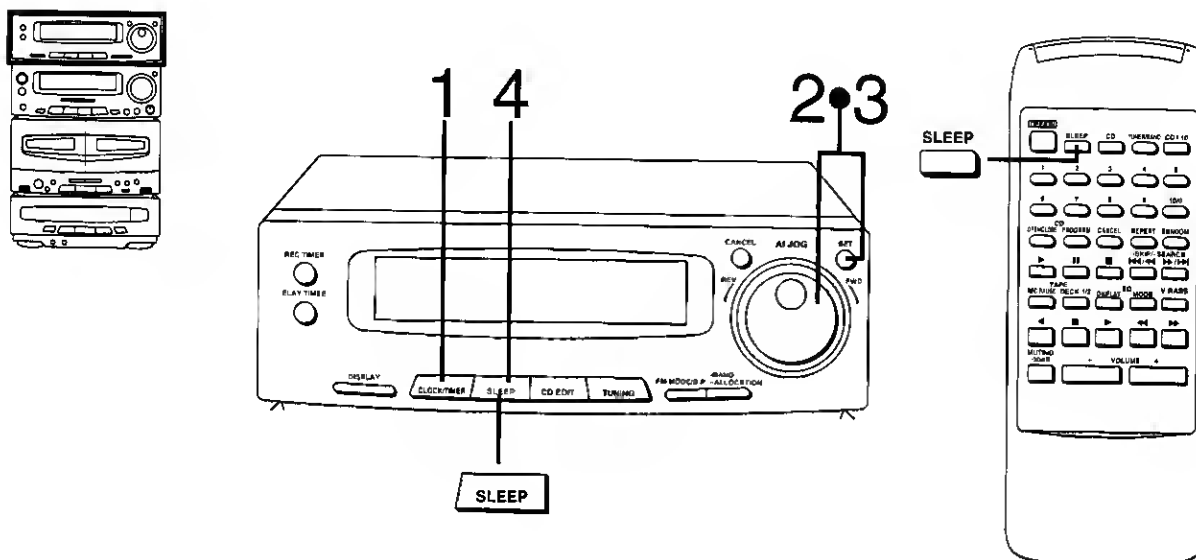
1. Press the power switch to be in the standby mode.
2. Press REC TIMER to go off the timer recording indicator.

# Using the Timer (continued)

## To use the sleep timer

You can use this timer function to switch the power to the standby mode at a desired time (within a range of 1 minute to 120 minutes from the present time).

Use the sleep timer to switch the power to the standby mode automatically in case you fall asleep while listening.

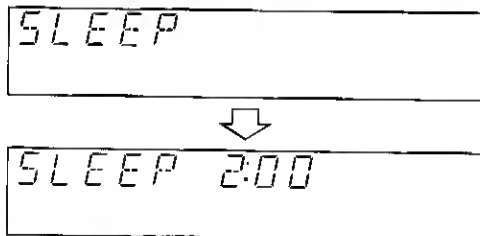


(Step 4 also available from the remote control)

Switch on the power.

**1 Press CLOCK/TIMER** while the sound source is playing.

**2 ① Turn the jog dial to select SLEEP.**  
The display will return to the previous indication after 10 seconds. Please finish setting within 10 seconds.



**② Press SET.**

**3 ① Turn the jog dial to set the length of time you would like the system to operate before it shuts off (sleep time).**

○ : 0:01-0:02-0:03-0:04...

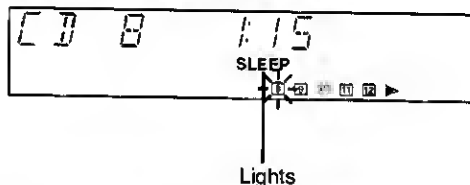
✓ : 2:00-1:59-1:58-1:57...

**② Press SET.**

The display will return to the previous display.

**4 Press SLEEP.**

The sleep timer indicator will appear.



Above display shows the sleep timer setting on the CD player.

The sleep time set by the steps above remains in the system's memory.

If you want to operate the system again on the same sleep time, you only need to press SLEEP.

**■ To confirm the time remaining on the sleep timer**

(Also available from the remote control)

**Press SLEEP.**



Approximately 5 seconds after you activate the sleep timer, the display will return to show the mode display. If you press SLEEP in this mode, the display will show the time remaining on the sleep timer for approximately 5 seconds.

■ **To change the time remaining on the sleep timer**

**1 Press SLEEP.**

Within 5 seconds, follow with the next operation, or the display will return to what was previously indicated.

**2 Turn the Jog dial to set the desired time.**

When the time remaining on the sleep timer was changed, the new setting time does not remain in the system's memory. Only the first setting time remains in it.

■ **To cancel the sleep timer mode**

**Press the power switch to put the system in standby mode or press SLEEP twice.**

■ **To use the sleep timer in conjunction with the timer play or timer recording operation**

**For example, to go to sleep listening to a radio broadcast, and wake up the next morning listening to a compact disc:**

- 1) Set the ON time and OFF time for the timer play.  
(See steps 1 to 4 on page 50.)
- 2) Prepare for the play of a compact disc, and set the volume level for the timer play.
- 3) Press PLAY TIMER.
- 4) Press SLEEP and set the desired time for the sleep timer.
- 5) Tune in your desired band and station, and adjust the volume level.

**For example, to go to sleep listening to a compact disc, and then to make a timer recording from a radio broadcast.**

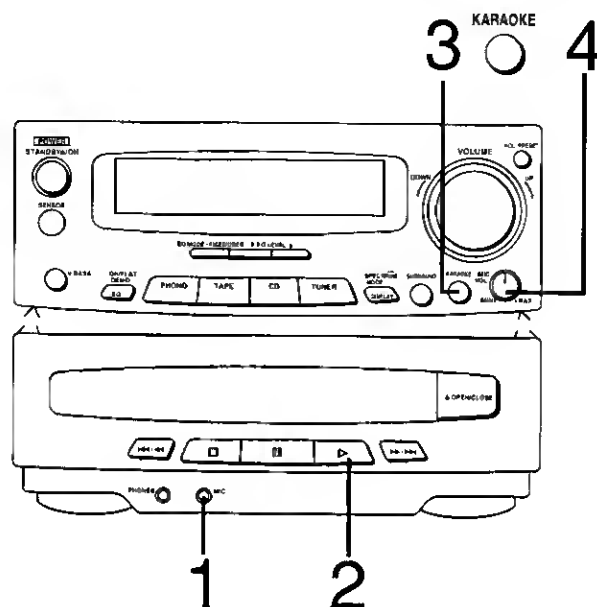
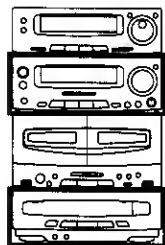
- 1) Set the ON time and OFF time for the timer recording.  
(See steps 1 to 4 on page 52.)
- 2) Select the desired band and station.
- 3) Load a cassette for recording in deck 2.
- 4) Press REC TIMER.
- 5) Press SLEEP and set the time for the sleep timer:  
(Be sure to set the sleep time to be off before the timer recording starts.)
- 6) Play the compact disc and adjust the volume level.

- When the timer play or the timer recording setting overlaps with the sleep timer setting, the sleep timer setting has priority.
- The various program plays can not be activated in series of the timer functions.

# Enjoying the Microphone Mixing

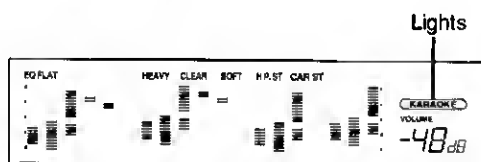
## Using the "KARAOKE" feature

This function attenuates only the singing voice in the tune, so you can easily enjoy karaoke (singing with an accompaniment) with compact discs.



Switch on the power.

- 1 Connect the microphone to the MIC jack.
- 2 Start playing a compact disc.
- 3 Press **KARAOKE** to ON.  
The following display will appear.



- 4 Start microphone mixing and adjust the microphone level.

The singing voice on the microphone will mix with sound of the compact disc.

### ■ To cancel the "KARAOKE" mode Press KARAOKE again.

KARAOKE



The display will change to the previous setting.

### Notes:

- This function may not be effective according to the types of the tune.
- You cannot enjoy karaoke function with the surround sound effect.
- If strange noises (squealing or howling) are emitted during mixing, keep the microphone far away from the speakers, or turn down the microphone volume level and system's volume level.
- When not using the microphone, disconnect the microphone from the MIC jack, and turn down the microphone volume level to MIN.
- This function can't be used to the compact disc of monaural source.

### ■ To make a recording your "KARAOKE" performance

Operate the recording on the cassette deck section and start microphone mixing.

To play back the tape recorded in "KARAOKE" mode, press KARAOKE to go off the display.

### ■ To use the "KARAOKE" discs

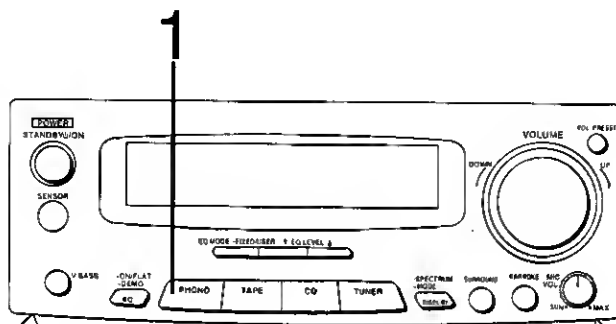
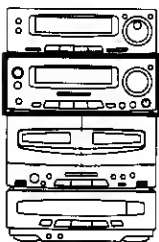
Operate the above steps 1, 2 and 4.



# Using an External Unit

## To enjoy an external source

You can connect an analog turntable to this unit.



### 1 Press the PHONO Input select button.

#### Note:

For the set with "DAT" input select button instead of "PHONO", press DAT.

### 2 Operate the unit which is connected to the system.

See the operating instructions of the unit concerned.

#### ■ To record on a DAT tape

(Only for the set with "DAT" input select button)

Start recording on a DAT, and then start playing the source to be recorded.

#### ■ Recording from an external source

1. Press REC PAUSE to put the cassette deck into the recording standby mode.
2. Press the PHONO input select button.
3. Press one of the playback buttons to start recording.
4. Start playing the source to be recorded.

# Concerning the Display

## Selecting the display

Press **DISPLAY** on the tuner section.

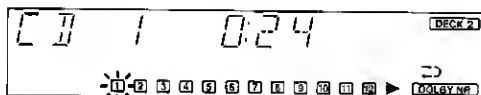
DISPLAY

The unit's display can be stepped through the input mode display, present time, tape counter.

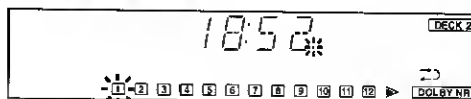
This feature comes in handy during recording when making a note of the tape counter or checking out the present time for recording a radio program.

When the input select button marked "CD" is used

Input display



Present time display



Tape counter display



- When there is no tape in both decks, the tape counter will display "-----".

## About the spectrum display

Press **DISPLAY** momentarily on the amplifier section.

-SPECTRUM  
-MODE

DISPLAY

- The spectrum analyzer shows the level of each sound range with five types of display described below.
- The spectrum analyzer display overlapped with the equalization curve will change as follows.

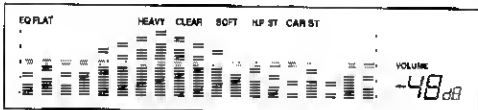
### 1 Bar-type display

This display indicates the strength of the sound in each tonal range.



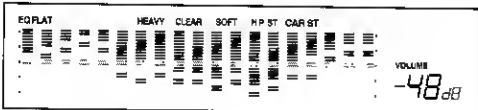
### 2 Peak-hold display

The peak sound value of each sound range is held on the display for about one second after occurs.



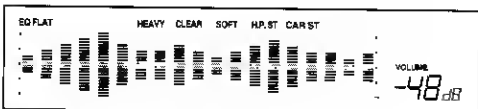
### 3 Aurora display

The peak sound value of each sound range is displayed in inverted form.



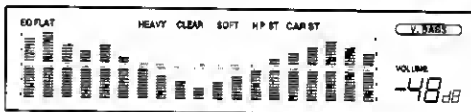
### 4 Symmetry display

This display indicates the strength of the sound from up end down.



### 5 Bass-mode display

This display appears only when you select the V. BASS mode. (See page 49.) It shows the strength of the augmented bass level.



Note:

When you press V. BASS to ON in any display modes, the bar-type display will be switched to appear.

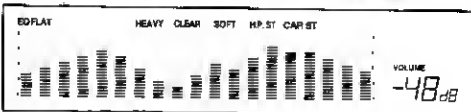
■ To display the spectrum analysis display without the equalization curve

Press and hold **DISPLAY** on the amplifier section.

-SPECTRUM  
-MODE

DISPLAY

The equalization curve will no longer appear.



To resume the previous mode, press and hold **DISPLAY** once again.

# Care & Use

## Concerning Cassette Tapes

### ■ Selection of cassette tapes

#### Cassette tapes exceeding 90 minutes

These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the machine.

Do not use the following types of tapes in this unit:

#### Fe-Cr tapes (TYPE III)

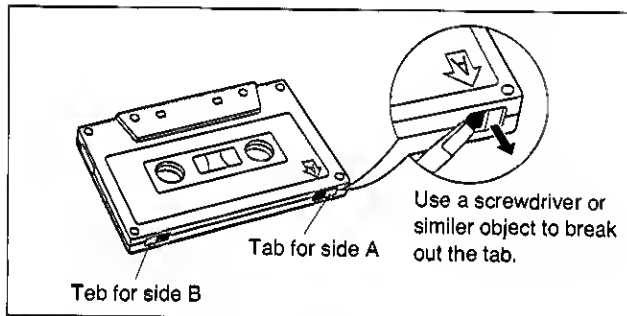
This type emphasizes the high-frequency range, making it impossible to obtain a flat frequency response.

#### Metal tape without detection holes in the cassette

Recordings will be very distorted. (There is no problem during playback, however.)

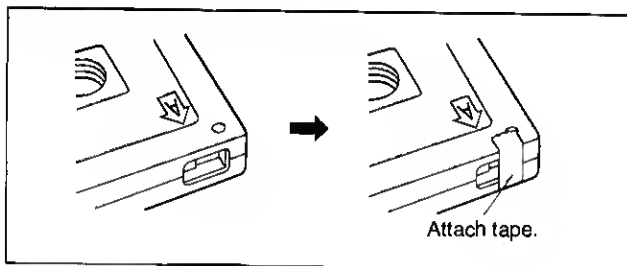
### ■ To prevent erasure of a recorded tape

Remove the erase-prevention tabs (thus preventing recording).



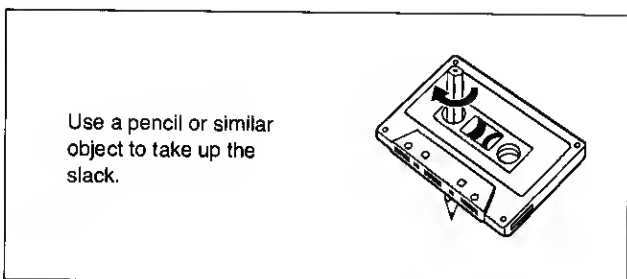
### To re-record on a protected cassette

Cover the slot with adhesive tape.



### ■ Tape slack

Tape slack may cause the tape to break.



### ■ Improper tape storage

You can damage tape if you store it in the following ways:

- In high temperature [35°C (95°F) or higher] or high humidity (80% or higher) areas.
- In a strong magnetic field (near a speaker, on top of a TV, etc.). This can erase a recording.
- In direct sunlight.

# Care & Use (continued)

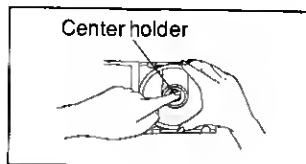
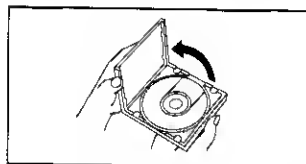
## Concerning Compact Discs

With this system, you can only use compact-discs having this mark:

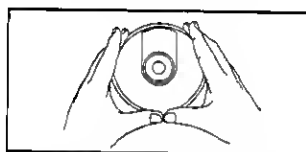
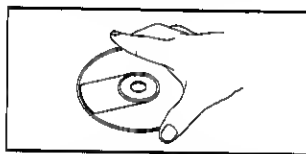


### ■ Handling precautions

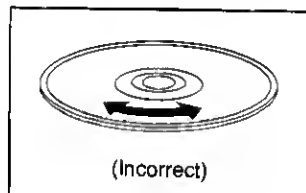
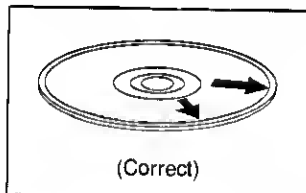
- To open the compact disc case, gently press the sides of the top, holding the top at both sides and pull up.  
To remove the disc from the case, press the center holder and lift the disc, holding it by the edges.



- To return the disc to the case, insert the disc with label facing up and press downward at the center.
- Hold compact discs by the edges so you will not soil the surface with fingerprints. Fingerprints, dirt, and scratches can cause skipping and distortion.



- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids, or any other solvent.
- If the surface is soiled, wipe gently with a soft, damp (water only) cloth.
- Always move the cloth directly outward from the center of the disc, not in a circular motion as with standard phonograph records.



- If you are taking the disc from a cold to a warm environment, moisture may form on the disc. Wipe this off with a soft, dry, lint-free cloth before using the disc.
- Do not write on the label side with a ball-point pen or other writing instrument.

### ■ Storage precautions

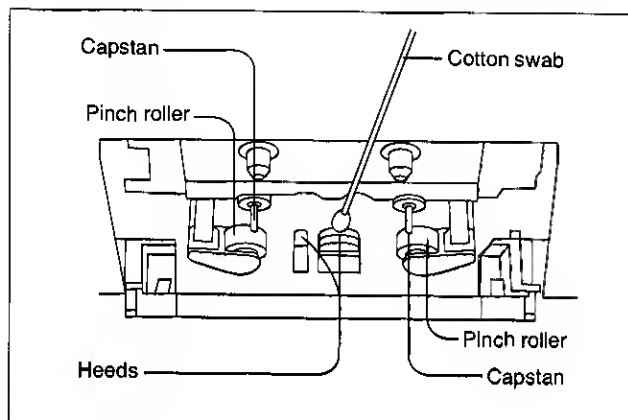
- Be sure to store discs in their cases to protect them from dust, scratches, and warping.
- Do not place or store discs in the following places:
  - 1) Locations exposed to direct sunlight.
  - 2) Humid or dusty locations.
  - 3) Locations directly exposed to a heat vent or heating appliance.
  - 4) In the glove compartment or rear deck of an automobile.

## Maintenance

### ■ Cassette deck head care

To ensure good sound quality for recording and playback, be sure to clean the heads approximately every 10 hours of use.

- 1) Turn off the power of the system.
- 2) Press the eject button to open the cassette holder.
- 3) Clean the heads, pinch roller, and the capstan shaft with a cotton swab (or with a soft, lint-free cloth) slightly moistened with isopropyl alcohol. Do not use any solution other than alcohol for head cleaning.



### ■ Cassette deck head demagnetization

- In order to maintain good sound quality during recording and playback, we recommend that you demagnetize the head assembly when there is still distortion or poor sound quality after you have cleaned the heads.
- If the head assembly becomes magnetized, it could create noise in your recordings, cause a loss of high-frequency response, or cause the erasure of valuable recordings. There are several types of head demagnetizers that you can purchase at local electronics supply stores. Follow the instructions that are supplied with the demagnetizer.
- Do not touch the head assembly with any type of metal object or tool such as a magnetic screwdriver.

### ■ Maintenance of external surfaces

- Use a soft, dry cloth to clean the cabinet and controls. If the surfaces are extremely dirty, use a soft cloth, dipped in a soap-and-water solution or a weak detergent solution. Wring the cloth well before wiping the surfaces. Then wipe once again with a soft, dry cloth.
- Never use alcohol, paint thinner, benzine, or a chemically treated cloth to clean the cabinet or controls. Such chemicals may damage the finish of your system.

# Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

Problem	Probable cause(s)	Suggested remedy
---------	-------------------	------------------

## Problems common to all systems

There is no sound when the power is ON.	Volume is set too low.	Adjust the volume level with the volume control on the amplifier.
The location of the various musical instruments is not well defined.	The (+) and (-) connections to one of the speakers are reversed.	Connect the speaker cord correctly.
The left and right sounds are reversed.	The left and right connections to the speaker are reversed.	Connect the speaker cord correctly.
Only one speaker is emitting sound.	One of the wires of the speaker cord is disconnected.	Connect the speaker cord correctly.
There is no sound when a source is being played.	The (+) and (-) wires of the speaker cords are shorted.	Switch the system to the standby mode, reconnect the speaker cords so that they are not shorted. Then switch on the power.
There is a low-frequency hum when a source is being played.	A power cord or a fluorescent light is located near a connecting cord.	Keep electrical appliances well away from the connecting cords.
The ERROR indicator appears on the display for about 1 second.	The wrong operation has just taken place.	Perform the correct operation of the present step again.

## While listening to FM broadcasts

<b>There is a "rushing" noise during a stereo broadcast which is not audible during a monaural broadcast.</b>	Noise is more likely to appear on a stereo signal than on a monaural signal.	<ul style="list-style-type: none"><li>• If you are using an indoor antenna, change to an outdoor antenna.</li><li>• If you are using a special outdoor antenna, try changing the installation location, height, and orientation.</li><li>• Try switching off the television or VCR.</li><li>• Press the FM mode button to change the reception from stereo to monaural mode.</li></ul>
<b>You hear excessive noise during a stereo broadcast, and occasionally the sound disappears.</b>	The installation location and orientation of the antenna are unsuitable. The transmitting station is a long distance away.	
<b>The stereo indicator of the tuner flickers and does not light completely.</b>		
<b>The sound during a stereo broadcast is highly distorted.</b>	There is a building or mountain nearby. [Distortion is caused by interference between the signal from the transmitting station (direct wave) and the signal reflected from the building or mountain (reflected wave).]	

## While listening to MW/LW broadcasts

You hear an unusual beat sound.	You are using the system at the same time you are playing a TV set.	Switch off the TV set, or use the system farther away from it.
You hear a low-frequency hum.	The antenna wire is near the power cord.	Separate the antenna wire from the power cord.

Problem	Probable cause(s)	Suggested remedy
---------	-------------------	------------------

### When there is a television set nearby

The picture on the TV disappears or stripes appear on the screen.	The location and orientation of the antenna are incorrect.	<ul style="list-style-type: none"> <li>• If an indoor antenna is being used, change to an outdoor antenna.</li> <li>• Separate the TV set from the system.</li> </ul>
	The wiring at the back of the system is unsuitable.	Separate the antenna wire of the TV set from the system.

### While listening to tapes

Sound is low, intermittent, of poor quality, noisy, scratchy, or unsteady.	Heads are dirty.	Clean the heads.
	The Dolby NR mode is set in the wrong position.	Set it to match the Dolby recording mode.
The deck ejection does not enter the recording mode.	The erase-prevention tabs are removed from the cassette.	Attach tape to cover the space left by removal of the erase-prevention tabs.
The cassette holder does not open even by pressing the eject button.	The AC power cord is disconnected or a power interruption has taken place during operation.	After reconnecting the AC power cord, switch on the power and then press the eject button.

### While listening to compact discs

The tray does not close when you load a disc and press the OPEN/CLOSE button.	The disc is not positioned correctly in the disc tray.	Reinsert the disc.
The display will not show the total number of tracks and total time when you load a disc. Disc play does not start when you press the play button. A certain part of the disc will not play.	The disc is not positioned correctly in the disc tray.	Reinsert the disc.
	The disc is loaded upside down.	Reload the disc.
	The disc is dirty.	Wipe the disc with a soft cloth.
	The disc is scratched.	Skip the scratched part of the disc.
	The disc is badly warped.	Replace the disc with a new one.
	The disc is a nonstandard one.	Replace the disc with a different one.
	There is condensation inside the disc player.	Switch the power ON, then wait for 20–30 minutes before using the disc player.

### While using the remote control

The remote control will not operate the system.	You have installed the batteries in the reverse polarity.	Reinsert the batteries in the correct polarity.
	The batteries are worn.	Replace the batteries with new batteries.

# Technical Specifications

## ■ Amplifier section

1 kHz continuous power output both channels driven 2×30 W (THD 1%, 6Ω)  
Total harmonic distortion half power at 1 kHz 0.07% (6Ω)

### Frequency response

(For United Kingdom, Continental Europe)

PHONO 30 Hz–15 kHz  
RIAA standard curve ±1 dB

### Input sensitivity and impedance

(For United Kingdom, Continental Europe)

PHONO 3 mV/47 kΩ

(For Australia, New Zealand and others)

DAT 250 mV/22 kΩ

Graphic equalizer 63 Hz, 160 Hz, 400 Hz, 1 kHz,  
2.5 kHz, 6.3 kHz, 12.5 kHz

## ■ FM tuner section

Frequency range 87.50–108.00 MHz (50 kHz step)

Sensitivity 14.7 dBf (1.5 µV, IHF 58)

S/N 26 dB 1.3 µV (40 kHz mod., 75Ω)

### Total harmonic distortion

MONO 0.2%

STEREO 0.3%

### S/N

MONO 70 dB (75 dB, IHF)

Alternate channel selectivity ±400 kHz 70 dB

Image rejection at 98 MHz 80 dB

### Stereo separation

1 kHz 35 dB

Antenna terminals 75Ω (unbalanced)

## ■ MW/LW tuner section

### Frequency range

(For United Kingdom, Continental Europe)

MW 522–1611 kHz (9 kHz step)

MW 530–1620 kHz (10 kHz step)

LW 144–288 kHz (9 kHz step)

(For others)

MW 531–1602 kHz (9 kHz step)

MW 530–1600 kHz (10 kHz step)

LW 153–279 kHz (9 kHz step)

### Sensitivity (S/N 20 dB)

MW (at 999 kHz, 1000 kHz) 500 µV/m

LW (at 254 kHz) 50 µV/m

## ■ Cassette deck section

Track system 4 track, 2 channel

### Heads

DECK 1 (playback) Permalloy head

DECK 2 (record/playback) Permalloy head

(erasure) Double gap ferrite head

### Motor

DC servo motor

### Recording system

AC bias, 100 kHz

### Erase system

AC erase

### Tape speed

4.8 cm/sec

## Frequency response

### NORMAL

40 Hz–14 kHz (+3, –6 dB)

### CrO<sub>2</sub>

40 Hz–14 kHz (+3, –6 dB)

### METAL

40 Hz–15 kHz (+3, –6 dB)

## S/N (CrO<sub>2</sub> type tape)

### Dolby NR off

52 dB (A-WTD)

### Dolby NR on

61 dB (CCIR)

## Wow and flutter

0.1% (WRMS)

## Fast forward and rewind time

Approx. 110 seconds  
with C-60 cassette tape

## ■ Compact disc player section

S/N 95 dB Filter (JIS A)

Digital filter 8 fs

D/A converter MASH (1 bit DAC)

## ■ Speaker system

### Type

3 way 3 speaker Bass-reflex

### Speaker(s)

woofer 14 cm cone type

midrange 6 cm cone type

tweeter Dome type

### Impedance

6Ω

### Input power

80 W (music)

(For Australia, New Zealand and others)

40 W (DIN)

### Output sound pressure level

86.5 dB/W (1.0 m)

### Cross over frequency

3.5 kHz, 10 kHz

### Frequency range

39 Hz–22 kHz (–16 dB)

### Dimensions (W×H×D)

192×329×250 mm

### Weight

3.5 kg

## ■ General

### Power consumption

180 W

### Power supply

(For United Kingdom, Australia and New Zealand)

AC 50/60 Hz, 230–240 V

(For Continental Europe)

AC 50/60 Hz, 230 V

(For others)

AC 50/60 Hz, 110/127/220/240 V

### Dimensions (W×H×D)

215×329×336 mm

### Weight

7.6 kg

## Notes:

- Specifications are subject to change without notice. Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

MASH is a trademark of NTT.